DOCUMENT RESUME

ED 045 687 HE 002 086

TITLE	Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1969.
INSTITUTION	National Science Foundation, Washington, D.C.
REPORT NO	NSF-70-40
PUB DATE	Sep 70
NOTE	91p.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 ($1.00)
EDRS PRICE	EDRS Price MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	*Doctoral Programs, Enrollment, Faculty, Fellowships, *Financial Support, *Graduate Students, *Higher Education, *Sciences
IDENTIFIERS	*National Science Foundation Traineeships

ABSTRACT

This report summarized statistical data on graduate student support, postdoctorals, and graduate faculty as of fall 1969 in 224 doctorate granting institutions applying for traineeship grants from the National Science Foundation for 1970. These 224 include virtually all U.S. doctoral granting institutions. Information is presented on: (1) graduate enrollment in the sciences; (2) types of major support of full-time graduate students in doctoral departments in terms of fellowships and traineeships, research assistantships, teaching assistantships, and other types of support; (3) sources of major support for full-time graduate students in doctoral departments in terms of U.S. Government support, institutional support, other outside support, and self-support; and (4) faculty and postdoctorals in doctoral departments. The appendices include: (1) a list of the institutions participating in the graduate traineeship program; (2) some technical notes presenting definitions of the terms used in this report and some comparative tables; (3) statistical tables; (4) instructions and consolidated departmental data sheets of doctoral departments; and (5) consolidated departmental summaries. (AF)

ED049687

Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

HE002086

1

Surveys of Science Resources Series
NATIONAL SCIENCE FOUNDATION
NSF 70-40

GENERAL NOTES

- Statistical data presented in this report relate solely to the 2,894 doctorate science departments of 224 institutions that furnished data on NSF traineeship applications for 1970.
- All data published in this report on student enrollment, faculty, and postdoctorals for 1969 refer to the fall of that year.
- The term "support" as used here refers in all cases to *major* support, which is defined as a total stipend of $1,200 or more, excluding tuition. In cases of multiple support, the major source was reported, and a graduate student was counted only once under one category.
- Information on degrees awarded refers to the academic year ended June 30 of the designated year.
- For convenience, the term "sciences" is used to denote both science and engineering.

ED049687

Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1969

An Analysis of Student Enrollments, Sources of Student Support, Faculty, and Postdoctorals in Doctorate Departments

Surveys of Science Resources Series

NATIONAL SCIENCE FOUNDATION

NSF 70-40

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $1

Foreword

THIS REPORT summarizes statistical data on graduate student support, postdoctorals, and graduate faculty as of fall 1969 in doctorate-granting institutions applying for traineeship grants from the National Science Foundation for 1970. Virtually all doctorate-granting institutions in the United States applied for traineeships and submitted information on their graduate programs. The primary purpose of such information is to facilitate the administration of the NSF's traineeship grant program. Secondarily, however, the data constitute a fund of information on graduate science education that is not available from any other source, particularly with reference to the types and major sources of financial support of graduate students.

Information on the characteristics and support of graduate science education is important to officials in government, education, and other organizations concerned with assuring an adequate supply of highly trained scientists and engineers to meet present and future manpower requirements of the U.S. economy. The types and sources of support available to graduate students are of interest to all concerned with the financing of higher education, including prospective graduate students, guidance counsellors, and the general public.

Data on the types and sources of financing of graduate education are particularly important today, because of the various pressures being placed on the structure of higher education by such public issues as inflation, selective service policies, leveling off of Federal support of higher education, student unrest, and competing demands for public funds to alleviate and solve problems faced by society. The present study provides some insight into the resultant impact of changing patterns of public and private support programs on graduate education in the sciences and engineering in doctorate-granting institutions.

This is the third in a series of published reports analyzing data submitted in traineeship grant applications by doctorate-granting institutions. The first covered graduate student support and manpower resources in graduate science education, fall 1965 and fall 1966, while the second was limited to an analysis of the support of full-time graduate students in the sciences, fall 1967.

This report on fall 1969 characteristics of graduate enrollment in doctorate institutions was prepared in the National Science Foundation's Office of Economic and Manpower Studies, Thomas J. Mills, Head. The basic data on which the report is based were supplied by the NSF's Division of Graduate Education, Howard D. Kramer, Division Director. Special recognition is accorded Dr. Douglas S. Chapin, Program Director, Graduate Fellowships and Traineeships Program, whose cooperation and assistance greatly facilitated the preparation of this report.

CHARLES E. FALK
Director, Division of Science Resources and Policy Studies

SEPTEMBER 1970.

ACKNOWLEDGMENTS

This report was prepared by Penny D. Foster under the supervision of Joseph H. Schuster, Study Director, Universities and Nonprofit Institutions Studies Group. Guidance and review in the preparation of the report were provided by Kenneth Sanow, Head, Statistical Surveys and Reports Section.

Contents

	Page
SUMMARY	vii
SECTION	
I. INTRODUCTION	1
II. GRADUATE ENROLLMENT IN THE SCIENCES	3
III. TYPES OF MAJOR SUPPORT OF FULL-TIME GRADUATE STUDENTS IN DOCTORATE DEPARTMENTS	6
Fellowships and Traineeships	8
Research Assistantships	9
Teaching Assistantships	11
Other Types of Support	12
IV. SOURCES OF MAJOR SUPPORT OF FULL-TIME GRADUATE STUDENTS IN DOCTORATE DEPARTMENTS	14
U.S. Government	15
Institutional Support	17
Other Outside Support	17
Self-support	18
V. FACULTY AND POSTDOCTORALS IN DOCTORATE DEPARTMENTS	19
Faculty	19
Postdoctorals	21
APPENDIXES	
A. Institutions Participating in the Graduate Traineeship Program	24
B. Technical Notes	27
C. Statistical Tables	37
D. Instructions and Consolidated Departmental Data Sheets (NSF Form 345)—Doctorate Departments	67
E. Consolidated Departmental Summaries	77

Text Tables

TABLE	Page
1. Percent change in enrollment of graduate students in doctorate departments, by area of science and enrollment status, 1967–68 and 1968–69	3
2. Percent distribution of full-time graduate students in doctorate departments, by area of science, citizenship, and type of support, 1969	7
3. Proportion of full-time graduate students in doctorate departments receiving major support from fellowships and traineeships, ranked by field of science, 1967 and 1969	9
4. Percent change in the number of full-time graduate students receiving major support as fellows and trainees, by citizenship and level of study, 1967–68 and 1968–69	9
5. Proportion of full-time graduate students in doctorate departments receiving major support from research assistantships, ranked by field of science, 1967 and 1969	10
6. Percent change in the number of full-time graduate students receiving major support as research assistants, by citizenship and level of study, 1967–68 and 1968–69	11

TABLES—Cont.

TABLE		Page
7.	Proportion of full-time graduate students in doctorate departments receiving major support from teaching assistantships, ranked by field of science, 1967 and 1969	12
8.	Percent change in the number of full-time graduate students receiving major support as teaching assistants, by citizenship and level of study, 1967–68 and 1968–69	12
9.	Percent change in the number of full-time graduate students receiving major support through "other" mechanisms, by citizenship and level of study, 1967–68 and 1968–69	13
10.	Full-time graduate students in doctorate departments, by principal source and type of support, 1969	14
11.	Full-time graduate students in doctorate departments, by principal source of support and area of science, 1969	16
12.	Percent change in the number of full-time graduate students in doctorate departments supported by the U.S. Government, 1967–68 and 1968–69	16
13.	Trends in the number of full-time faculty in doctorate departments, by area of science, 1967–69	20
14.	Trends in the number of postdoctorals in doctorate departments, by area of science, 1967–69	21

Charts

CHART		Page
1.	Number of graduate students in doctorate departments, by enrollment status, 1969	3
2.	Characteristics of graduate students in doctorate departments, 1969	5
3.	Percent distribution of types of major support of full-time graduate students in doctorate departments, by area of science, 1967–69	6
4.	Full-time graduate students holding fellowships and traineeships in doctorate departments, 1969	8
5.	Full-time graduate students holding research assistantships in doctorate departments, 1969	10
6.	Full-time graduate students holding teaching assistantships in doctorate departments, 1969	11
7.	Full-time graduate students receiving major support through "other" mechanisms, 1969	13
8.	Major sources of support of full-time graduate students in doctorate departments, 1969	15
9.	Percent distribution of graduate students supported by the U.S. Government, 1969	15
10.	Percent distribution of graduate students supported by institutions and State and local governments, 1969	17
11.	Percent distribution of graduate students depending upon self-support, by area of science, 1969	17
12.	Number of full-time faculty in doctorate departments, 1969	19
13.	Number of full-time faculty in doctorate departments, 1967–69	19
14.	Full-time graduate faculty in doctorate departments, 1969	20
15.	Number of postdoctorals in doctorate departments, 1969	21

- Data in percent terms are rounded to the nearest whole number in the text and charts, but are shown in tables to one decimal. Annual percent changes and ratios are shown to one decimal throughout the report.
- Data may not add to subtotals and totals because of rounding.

Summary

Number of Science Graduate Students

Graduate enrollment in 2,894 science doctorate departments of 224 universities and colleges that submitted information to the National Science Foundation for fall 1969 totaled 184,845. These students were distributed as follows:

Area of science—Engineering, 28 percent; social sciences, 20 percent; physical sciences, 19 percent; life sciences, 17 percent; mathematical sciences, 8 percent; psychology, 7 percent.

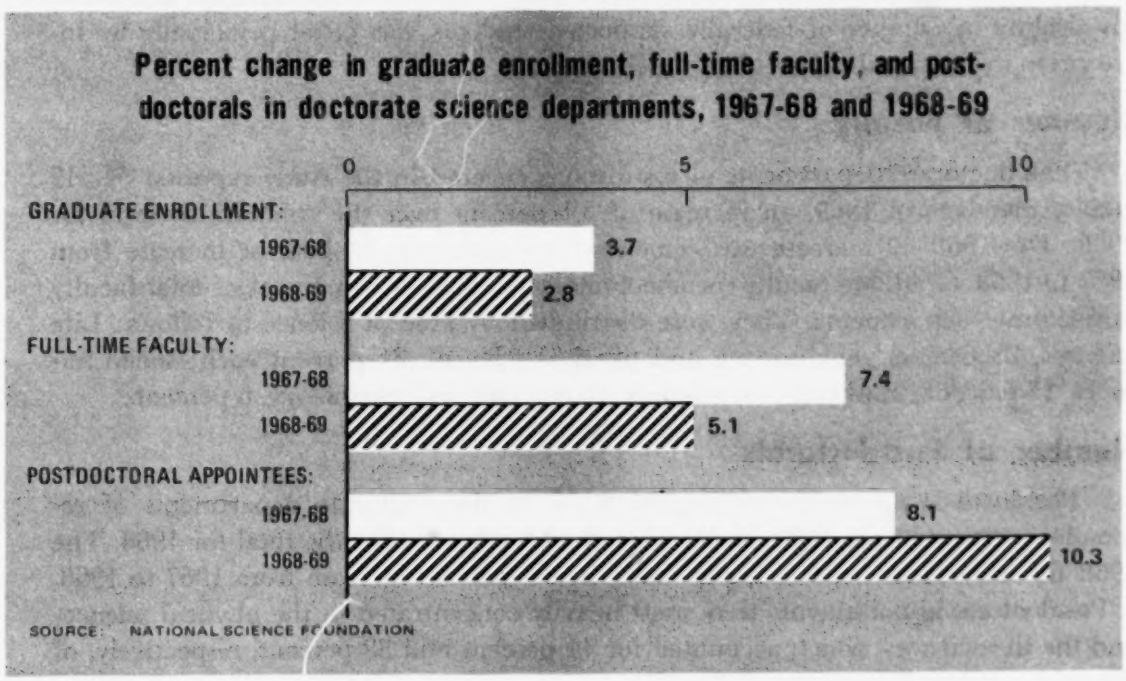
Enrollment status—Full-time students, 76 percent; part-time students, 24 percent.

Citizenship—U.S. citizens, 83 percent; foreign students, 17 percent.

Level of study—First-year students, 35 percent; beyond-first-year students, 65 percent.

Fall 1969 graduate enrollment in reporting science doctorate departments was 2.8 percent higher than in fall 1968, or slightly below the 3.7-percent increase from 1967 to 1968. The annual rates of increase in graduate enrollment in psychology, the social sciences, and the life sciences were substantially higher than the averages prevailing for all areas of science combined for 1967–68 and 1968–69, respectively.

Types of major support of full-time graduate students. Principal mechanisms utilized for full-time graduate student support in 1969 were: Fellowships and traineeships (30 percent), teaching assistantships (23 percent), research assistantships (22 percent), and "other" types, including principally self-support (26 percent).



The relative change in the number of students utilizing various types of support during 1967–69, based on 2,338 identical departments reporting for each of the 3 years, was as follows:

Type of support	*Percent change*	
	1967–68	*1968–69*
Fellowships-traineeships	1.8	−6.0
Research assistantships	−1.1	−.8
Teaching assistantships	5.0	3.6
Other types of support	6.0	11.6

Sources of major support of full-time graduate students. More than four-fifths (81 percent) of the full-time graduate science students received major financial assistance ($1,200 or more annually, exclusive of tuition) from outside sources. The U.S. Government financed 37 percent of the full-time graduate students in 1969; institutions and State and local governments, 36 percent; and other outside sources, such as industry, private foundations, etc., 9 percent. The remaining 19 percent relied upon self-support, including loans, savings, and family assistance, to finance their education.

The Federal Government provided major support to 51,620 full-time graduate students through the following mechanisms: Fellowships-traineeships, 56 percent; research assistantships, 38 percent; teaching assistantships, 1 percent; and other types, 6 percent.

The relative change in the number of students receiving support from various sources, based on the 2,338 identical departments reporting from 1967 to 1969, was as follows:

Source of support	*Percent change*	
	1967–68	*1968–69*
U.S. Government	−1.6	−5.9
Other U.S. sources, including institutional and self-support	6.4	6.0
Foreign sources	−12.0	11.6

The leveling off of U.S. Government support was a factor in the reduction of growth rate in graduate science enrollment from 1967–69. However, the impact of the decline in number of federally supported students was offset principally by increases in institutional support and in self-support.

Number of Faculty

The doctorate departments of institutions covered in the study reported 54,549 faculty members in 1969, an increase of 5.1 percent over the comparable total for 1968. The 1968–69 increase was somewhat less than the 7.4-percent increase from 1967 to 1968. Graduate faculty members totaled 45,687, or 84 percent of total faculty in doctorate departments. They were distributed by area of science as follows: Life sciences, 25 percent; engineering and physical sciences, 21 percent each; social sciences, 17 percent; mathematical sciences, 10 percent; and psychology, 6 percent.

Number of Postdoctorals

Postdoctoral appointments totaled 8,517 in the doctorate departments of respondent institutions in 1969, an increase of 10.3 percent over the total for 1968. The 1968–69 rate of increase was higher than the 8.1-percent increase from 1967 to 1968.

Postdoctoral appointments were most heavily concentrated in the physical sciences and the life sciences, which accounted for 44 percent and 38 percent, respectively, of the total.

Section I. Introduction

The 224 science doctorate-granting institutions that applied for 1970 NSF traineeships included virtually all the institutions granting such degrees. At least one institution from each of the 50 States and the District of Columbia was represented in the roster of applications, as is shown in the list of institutions in appendix A. Doctorate departments in the study account for approximately 76 percent of the graduate enrollment and 94 percent of the doctorates granted in the sciences and engineering by U.S. universities and colleges.[1]

The present report for fall 1969 has a number of features in common with the two previous reports in this series.[2] For example, the information requested on Departmental Data Sheets that have been used to collect data on science departments for each of the years since 1966 has remained unchanged. Among the differentiating features in each of the reports issued in the series are the differences in coverage of graduate science education resulting from the increase in the number of applicant doctorate institutions, as well as the number of participating science departments. The number of participating institutions and departments for recent years was as follows:

Year	Number of institutions	Number of departments		
		Total	Master's	Doctorate
1966.....	204	2,866	441	2,425
1967.....	209	3,016	436	2,580
1968.....	219	3,190	454	2,736
1969.....	224	3,354	460	2,894

As previously mentioned, not all eligible institutions nor all science departments within an applicant institution request NSF traineeship grants. Nevertheless, the coverage of science departments, though not complete, has become increasingly comprehensive.

The Departmental Data Sheets and Departmental Summaries submitted by the 224 institutions seeking grants for 1970 under the NSF's Graduate Traineeship Program provided the fall 1969 data upon which this report is based.[3] (Graduate enrollment characteristics reported in NSF traineeship grant applications aggregate data for the year prior to the one for which the grant is requested.) The Departmental Data Sheet was the principal source of information on full- and part-time graduate students, faculty, postdoctorals, and related characteristics of graduate science education. The Departmental Summary provided trend statistics on enrollment, faculty, and postdoctorals, 1967 to 1969, in the doctorate departments of institutions covered in this report.

This report is devoted to an analysis of graduate student support and manpower resources in the 2,894 doctorate departments of participating institutions. Moreover, the educational characteristics of these doctorate departments can be considered reasonably representative of the universe, since statistical coverage was virtually complete. In contrast, the 460 master's departments accounted for a relatively minor share of the degree output or of manpower resources of the doctorate institutions.[4]

Figures on graduate enrollment in doctorate departments contained in this report include virtually all graduate students enrolled in degree-credit programs with the direct objective of attaining a doctorate degree in the sciences or engineering. They, of course, also include students whose current educational objective is the attainment of master's degrees, and who may or may not plan to continue to the doctorate level at some later time.

Trends in selected characteristics of graduate enrollment in doctorate science departments during 1967–69 are covered in the report. These trend data relate to data for an identical group of departments

[1] See appendix B for a description of the coverage of graduate enrollment and degree statistics presented in this report.

[2] National Science Foundation, *Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1965 and Fall 1966* (NSF 68–13), and *Support of Full-Time Graduate Students in the Sciences, Fall 1967* (NSF 69–34) (Washington, D.C., 20402: Supt. of Documents, U.S. Government Printing Office).

[3] The Departmental Data Sheets and the Departmental Summaries are reproduced in appendixes D and E, respectively.

[4] In the fall 1969, the 460 master's departments accounted for only 6 percent of the graduate enrollment, 8 percent of the full-time graduate science faculty, and 1 percent of the postdoctorals in the 224 doctorate-granting institutions.

for each of the 3 years. For example, the Departmental Summary provided selected overall data on graduate enrollment and manpower resources during 1967–69 for the 2,894 doctorate departments that applied for traineeship grants for 1970. Other trend data, such as type and sources of major support, are based on information reported by the 2,338 doctorate departments that applied for NSF traineeships for each of the years, 1968, 1969, and 1970. Thus, all trend data shown in the report relate to identical groups of departments.

The university and college science departments that supplied the information utilized a wide variety of titles. To organize the statistical data reported by departments in a convenient form, the system used in the two earlier NSF studies of graduate student support was adopted. Departments were classified in 41 fields of science, which, in turn, were grouped for some purposes in six areas of science, as follows:

Engineering
- Aeronautical
- Agricultural
- Chemical
- Civil
- Electrical
- Engineering science
- Industrial
- Mechanical
- Metallurgical and materials
- Mining
- Nuclear
- Petroleum
- Other engineering

Physical sciences
- Astronomy
- Atmospheric sciences
- Chemistry
- Geosciences
- Oceanography
- Physics

Mathematical sciences
- Applied mathematics
- Mathematics
- Statistics

Life sciences
- Agriculture
- Biochemistry
- Biology
- Botany
- Microbiology
- Pharmacology
- Physiology
- Zoology
- Other life sciences

Psychology

Social sciences
- Agricultural economics
- Anthropology
- Economics (except agricultural)
- Geography
- History and philosophy of science
- Linguistics
- Political science
- Sociology
- Sociology and anthropology

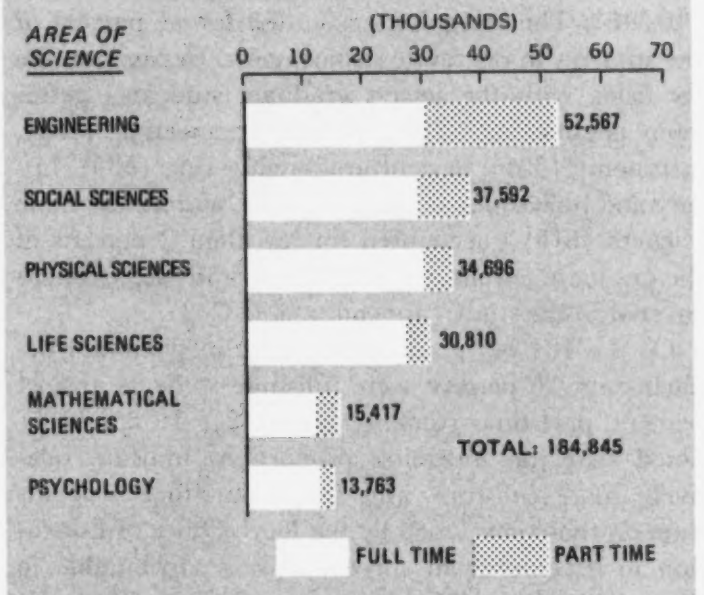
The appendixes provide somewhat more statistical information than is contained in the text of the report and provide reference materials that may be useful to persons concerned with details on characteristics of graduate education in doctorate departments in specific areas or fields of science. Appendix A lists by State the 224 doctorate institutions that supplied the information on which the report is based, while appendix B contains information regarding the definitions and extent of coverage. Appendixes C, D, and E consist of statistical aggregates reported by doctorate departments, including the Instructions, Consolidated Departmental Data Sheets, and Departmental Summaries for each of the six areas of science.

Section II. Graduate Enrollment in the Sciences

This section of the report is primarily concerned with four important characteristics of graduate science enrollment in doctorate departments, as follows: (1) Distribution of graduate students among areas and fields of science; (2) relative number of full- and part-time students; (3) citizenship of students, U.S. or foreign; and (4) proportions of first-year and beyond-first-year students.

Graduate enrollment in the science doctorate departments covered in this study increased 2.8 percent between 1968 and 1969, compared with a rate of increase of 3.7 percent between 1967 and 1968 (table 1). The foregoing annual rates of increase were substantially below the 9.3-percent annual rate of increase in enrollment for advanced degrees in the sciences and engineering in all institutions of higher education that prevailed during the 7-year period 1960 to 1967.[5] The reduced rate of increase in graduate enrollment in science doctorate departments during 1967–69 was contrary to expectations based on demographic factors. The population base that includes most graduate students, persons ranging in age from 22 through 27 years, increased 3.0 percent from 1967 to 1968 and at a substantially higher rate of 8.0 percent from 1968 to 1969.[6]

Chart 1. **Number of graduate students in doctorate departments, by enrollment status, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-1).

[5] Based on U.S. Office of Education statistics contained in National Science Foundation, *Science and Engineering Doctorate Supply and Utilization, 1968–80*, (NSF 69–37) (Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office, 1969), page 14.

[6] Based on data published in U.S. Bureau of the Census, *Current Population Reports*, Series P–25, Nos. 314, 385, and 441.

Table 1.—*Percent change in enrollment of graduate students in doctorate departments, by area of science and enrollment status, 1967–68 and 1968–69* [a]

Area of science	Total		Full time		Part time	
	1967–68	1968–69	1967–68	1968–69	1967–68	1968–69
Total	3.7	2.8	3.8	2.1	3.3	4.9
Engineering	1.0	1.9	1.4	1.5	.5	2.6
Physical sciences	1.6	−1.2	2.0	−2.4	−1.2	7.4
Mathematical sciences	2.8	.5	3.1	.2	1.6	1.2
Life sciences	5.3	3.9	4.5	3.7	13.3	5.0
Psychology	8.5	7.0	7.9	5.3	13.5	19.0
Social sciences	7.3	6.4	6.7	5.8	9.4	8.7

[a] Based on appendix table C–1.

It is also noteworthy that graduate enrollment in nonscientific fields far outstripped the relatively small increases experienced in the sciences and engineering in recent years. Graduate enrollments in the arts, humanities, and other nonscientific fields increased 10.3 percent from 1967 to 1968 and 9.4 percent from 1968 to 1969.[7] As will be seen in sections III and IV of this report, there was a notable reduction in the number of federally financed fellowships-traineeships and research assistantships which could have been a principal factor responsible for the lowered rate of growth in graduate enrollment in the sciences and engineering since 1968.

In the analysis of various characteristics of graduate education covered in this report, such as relative change in enrollment and relative numbers of part-

[7] Based on statistics of the U.S. Office of Education, Survey of Students Enrolled for Master's and Higher Degrees, various years, and preliminary data for fall 1969.

time students, foreign students, etc., the wide differences in graduate enrollment in the various areas of science should be taken into account. For example, the number of students in the six areas of science ranged from a high of 52,567 in engineering to a low of 13,763 in psychology (chart 1).

As might be expected with respect to the 41 fields of science, the disparity among fields in number of students was much greater than was the case with the six areas.[8] For example, the six fields with 10,000 or more students were electrical engineering (16,162), chemistry (15,813), psychology (13,763), physics (12,804), mathematics (12,123), and political science (10,546). The foregoing accounted for 44 percent of the students in doctorate departments. In contrast, the six fields with the fewest graduate students—petroleum engineering (331), mining engineering (334), astronomy (531), agricultural engineering (533), history and philosophy of science (766), and atmospheric sciences (815)—accounted for less than 2 percent of the graduate enrollment in the doctorate departments covered in the study (appendix table C–2).

Of the 184,845 graduate students in doctorate departments, 76 percent were full-time students and 24 percent part-time students (chart 2). It should be noted that the foregoing proportions indicate relatively more full-time and fewer part-time students than do those developed by the U. S. Office of Education in its enrollment survey. This is attributable to the fact that the NSF's Departmental Data Sheet defines a full-time graduate student as a "*bona fide* graduate student (not a regular staff member, *e.g.*, an instructor) who is engaged entirely in training activities in his field of science; these activities may embrace any appropriate combination of study, teaching, and research." In contrast, the U.S. Office of Education's definition is more restrictive and excludes many research assistants and teaching assistants counted as full-time students in this report.[9] It is difficult to make exact comparisons of enrollment data contained in this report with U.S. Office of Education data, because these data include only students in doctorate departments that applied for NSF traineeships for 1970, while the latter include all graduate students, including those in both master's and doctorate departments.

One of the noteworthy aspects of the reduced rate of increase in overall graduate enrollments from 1968 to 1969 was that part-time enrollment increased 4.9 percent, or more than double the 2.1-percent rate of increase for full-time enrollment. The foregoing differing rates of increase may partly reflect career choices made by male graduate students to avoid the impact of 1967 Selective Service Act changes, which increased their vulnerability to the draft. Some male graduate students, both first-year and beyond-first-year, may have chosen to pursue graduate study on a part-time basis in order to take deferrable full-time jobs. The increase in graduate enrollment—both full- and part-time—in psychology was the most dramatic shift upward during 1968–69. In contrast, the decline in full-time enrollment in the physical sciences of 2.4 percent more than offset the increase in part-time enrollment of 7.4 percent from 1968 to 1969.

U.S. citizens comprised 83 percent of graduate enrollment in the sciences and engineering, and foreign students constituted the remaining 17 percent (chart 2). In both absolute and relative terms, students of foreign citizenship in engineering far exceeded the comparable number in the other areas of science. In terms of enrollment status (full-time and part-time) the differences among areas of science in the citizenship of graduate students were quite pronounced.

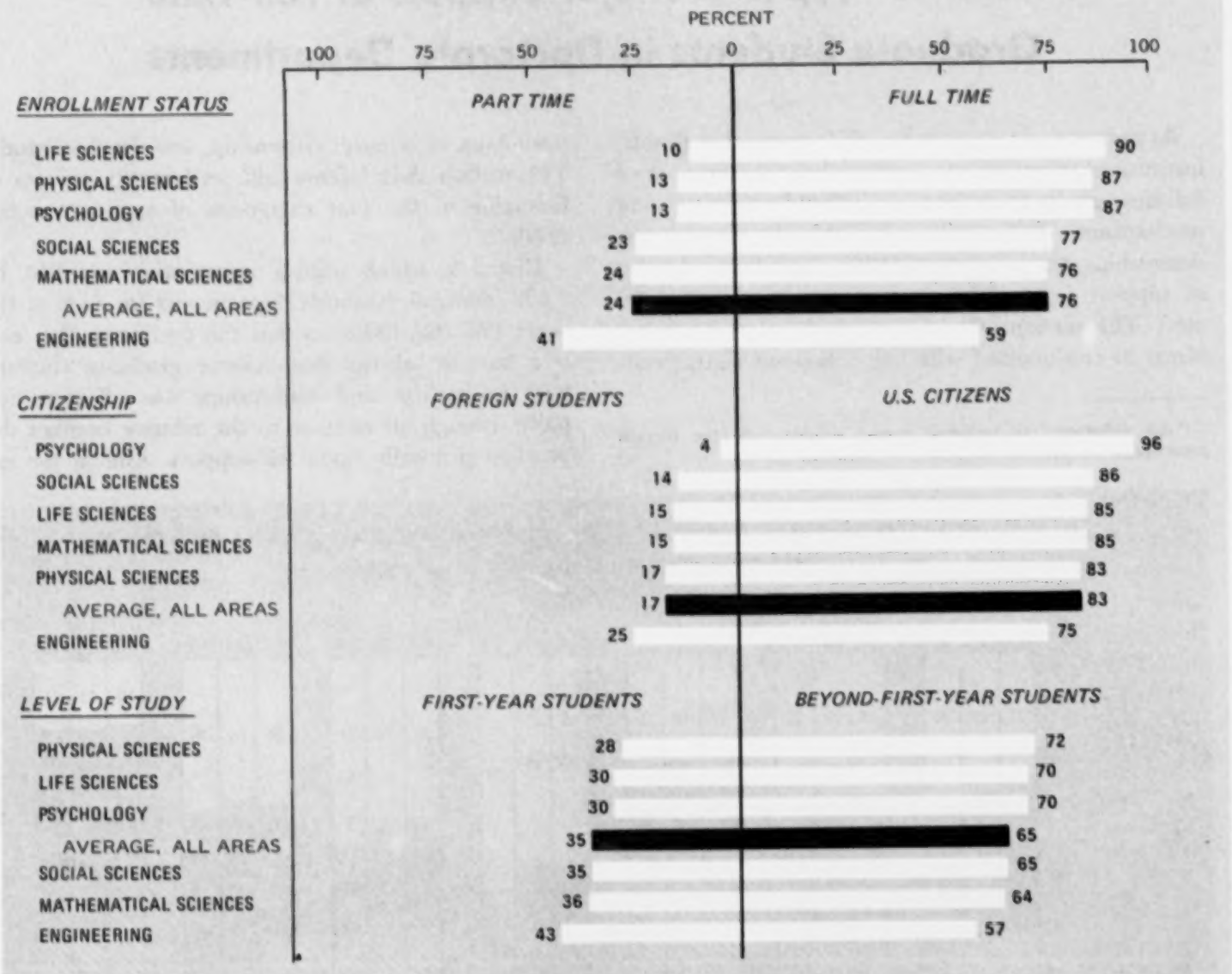
First-year graduate students in doctorate departments comprised 35 percent of the total in 1969, and beyond-first-year students, 65 percent. Among areas of science, the relative number of first-year students ranged from a high of 43 percent in engineering to a low of 28 percent in the physical sciences. Interpreting the significance of the foregoing data requires that a number of divergent factors be taken into account. For example, the proportion of first-year students tends to be highest in growing areas of science where ample stipend-support is available to attract new students, as well as in areas of science where relatively large numbers of students view master's degrees as a terminal degree. On the other hand, the proportion of beyond-first-year students will be highest in fields where a relatively large number of students seek doctorates and the time required to earn the advanced degree is relatively long.

In terms of enrollment status, there were sizable dif-

[8] There is considerable arbitrariness in defining the 41 fields of science. The number of students shown for a given field could depend on the fineness of the classification and the extent to which subdisciplines or related disciplines were grouped together or shown separately. For example, the classification used in this report does not break the area of science, "psychology," into any separate fields.

[9] The U.S. Office of Education's Higher Education General Information Survey (HEGIS), Students Enrolled for Advanced Degrees, Fall 1969 (OE Form 2300–2.5), defined a full-time graduate student as follows: "A full-time student is one whose academic load in terms of course work or other activity (such as a thesis, research, or teaching) is at least 75 percent of that normally required of such students. Time spent by teaching fellows should be included only if such teaching is performed as a requirement for a degree. Employment which is not a part of the prescribed activity for an advanced degree or time spent on work required because of lack of undergraduate background should not be counted as time spent on graduate work. A part-time student is one who is carrying an academic schedule of less than three-fourths the normal load."

Chart 2. **Characteristics of graduate students in doctorate departments, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLES C-2, C-3, AND C-6).

ferences among areas of science, and, on an overall basis, in the relative numbers of first-year and beyond-first-year students. Full-time graduate enrollment consisted of 33 percent first-year students and 67 percent beyond-first-year, compared with 42 percent and 58 percent, respectively, for part-time enrollment. Engineering exceeded all other areas in the relative numbers of first-year students on both a full-time basis (39 percent) and a part-time basis (50 percent). This is probably related to the large number of terminal master's degrees awarded in engineering. The physical sciences had the highest proportion of full-time graduate students in the beyond-first-year category (73 percent), while the life sciences ranked first in terms of part-time graduate students in the beyond-first-year level of study (72 percent) (appendix table C–6).

D1 15

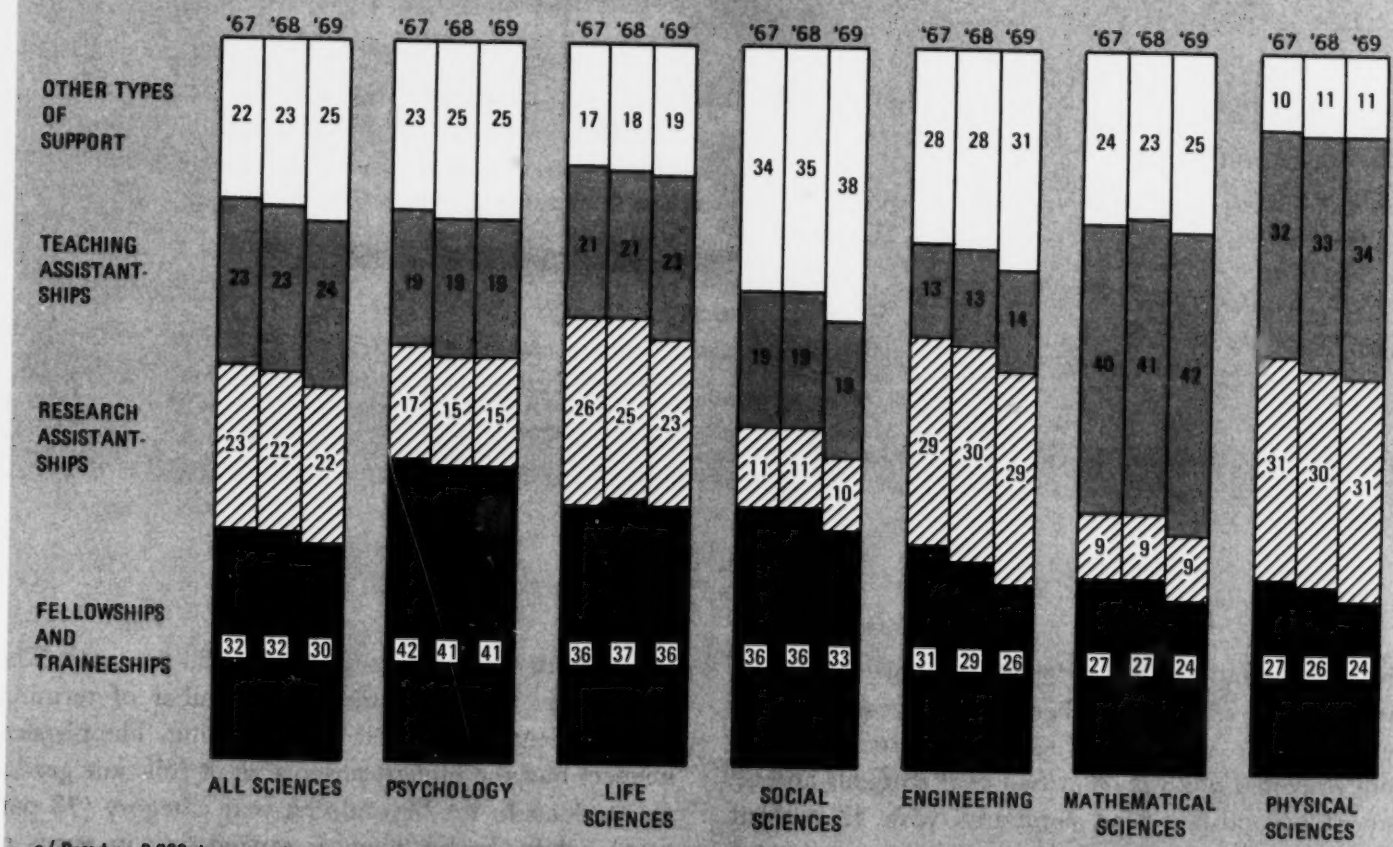
Section III. Types of Major Support of Full-Time Graduate Students in Doctorate Departments

As part of their requests for NSF traineeship grants, institutions provided information about the number of full-time graduate students supported by the following mechanisms: Fellowships-traineeships,[10] research assistantships, teaching assistantships, and "other" types of support (*e.g.*, self-support, loans, family support, etc.). This section will consider these support mechanisms in conjunction with the following characteristics: Area of science, citizenship, and level of study. The section that follows will analyze the sources of financing of the four categories of support mechanisms.

Chart 3, which utilizes information supplied by 2,338 identical doctorate departments for each of the years 1967–69, indicates that the decline in the relative number of full-time science graduate students with fellowships and traineeships was offset principally through an increase in the relative number dependent primarily upon self-support. Among the ex-

[10] See definitions in technical notes, appendix B, for further explanation of the two categories of stipends.

Chart 3. **Percent distribution of types of major support of full-time graduate students in doctorate departments, by area of science, 1967-69** a/


'67 '68 '69
OTHER TYPES OF SUPPORT
TEACHING ASSISTANT-SHIPS
RESEARCH ASSISTANT-SHIPS
FELLOWSHIPS AND TRAINEESHIPS
ALL SCIENCES 22 23 25 / 23 23 24 / 23 22 22 / 32 32 30
PSYCHOLOGY 23 25 25 / 19 19 19 / 17 15 15 / 42 41 41
LIFE SCIENCES 17 18 19 / 21 21 23 / 26 25 23 / 36 37 36
SOCIAL SCIENCES 34 35 38 / 19 19 19 / 11 11 10 / 36 36 33
ENGINEERING 28 28 31 / 13 13 14 / 29 30 29 / 31 29 26
MATHEMATICAL SCIENCES 24 23 25 / 40 41 42 / 9 9 9 / 27 27 24
PHYSICAL SCIENCES 10 11 11 / 32 33 34 / 31 30 31 / 27 26 24

a/ Based on 2,338 doctorate departments reporting consistently for three years, 1967-69.

SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLES C-15e – C-15g).

ceptions to this overall pattern were psychology and the life sciences in which the proportion of fellows-trainees remained rather stable. The data also indicate that graduate students in the physical sciences tended to shift from fellowships-traineeships to teaching assistantships for their principal support during the period.

Of the four different classifications of student aid used in this report, fellowships-traineeships were the type of major support utilized by the largest number of students, followed in order by "other" types (primarily self-support), teaching assistantships, and research assistantships (appendix table C–7).

There were wide variations among areas of science in the types of support used by full-time students to finance their graduate education in 1969. For instance, in engineering and the social sciences, the largest relative number of full-time students were supported primarily by "other" mechanisms; in the physical and mathematical sciences, by teaching assistantships; in the life sciences and psychology, by fellowships and traineeships. In none of the six areas of science were research assistantships the leading mechanism of major support.

U.S. citizens were predominantly supported by fellowships-traineeships, and more of these students were studying in the life sciences than any other area. The largest numbers of U.S. citizens on research and teaching assistantships were in the physical sciences, while the social sciences enrolled the largest number relying on "other" support mechanisms (table 2).

Foreign students, who are not eligible for NSF or AEC fellowships-traineeships, relied primarily upon research assistantships for their support and concentrated their efforts in engineering. Those utilizing fellowships and traineeships were mainly in the social sciences, those relying upon teaching assistantships were most heavily engaged in the physical sciences. Those depending upon other types of support were predominantly in engineering.

A dissimilar pattern was discernible in the mechanism utilized by first-year students as opposed to those beyond their first year. In rank order, first-year students depended mostly upon "other mechanisms," fel-

Table 2.—*Percent distribution of full-time graduate students in doctorate departments, by area of science, citizenship, and type of support, 1969* [a]

Area of science	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
Total (number)	141,199	41,734	30,471	32,991	36,003
	Percent distribution				
Engineering	21.8	19.3	29.7	12.8	26.4
Physical sciences	21.4	17.0	30.9	30.5	10.0
Mathematical sciences	8.3	6.7	3.8	14.5	8.3
Life sciences	19.5	23.2	21.0	18.5	15.0
Psychology	8.4	11.4	5.6	6.9	9.0
Social sciences	20.5	22.4	9.1	16.9	31.4
U.S. citizens (number)	113,167	36,462	21,466	26,485	28,754
	Percent distribution				
Engineering	17.6	18.1	22.5	9.3	20.9
Physical sciences	21.6	17.3	34.1	30.1	10.0
Mathematical sciences	8.5	6.6	3.8	14.6	8.7
Life sciences	20.6	24.0	22.2	20.2	15.5
Psychology	10.1	12.7	7.3	8.1	10.8
Social sciences	21.6	21.3	10.2	17.8	34.2
Foreign students (number)	28,032	5,272	9,005	6,506	7,249
	Percent distribution				
Engineering	38.9	27.6	46.9	27.0	48.0
Physical sciences	20.4	15.2	23.2	32.4	10.1
Mathematical sciences	7.6	7.1	3.9	14.3	6.6
Life sciences	15.2	17.7	18.1	11.5	13.1
Psychology	1.8	2.3	1.5	2.0	1.8
Social sciences	16.0	30.1	6.4	12.9	20.3

[a] Based on Departmental Data Sheets appearing in appendix D.

ai 17

lowships-traineeships, teaching assistantships, and finally, research assistantships. The beyond-first-year students were supported first by fellowships-traineeships, then research assistantships, teaching assistantships, and last, "other mechanisms," reflecting the increased experience and qualification gained after further study which improved their opportunities for the more desirable forms of support.

Fellowships and Traineeships

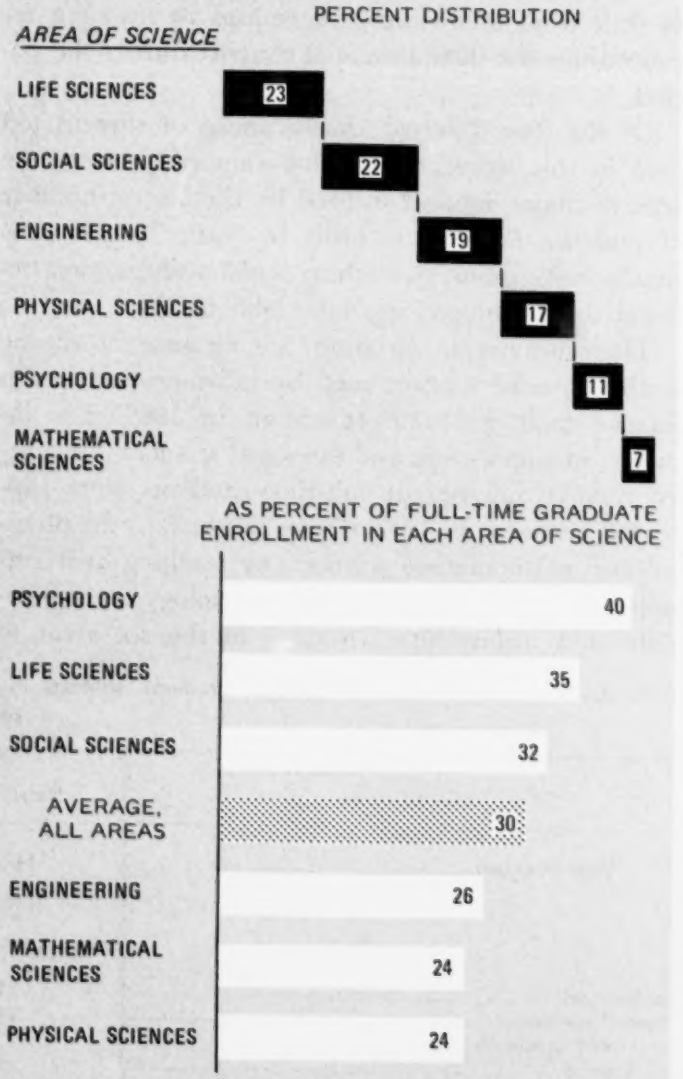
Two of the most common types of graduate student assistance are fellowships and traineeships, both of which offer the student considerable freedom during his studies to pursue his advanced training without having to provide any specific services to his institution. Financial aid is offered with "no strings" attached, which allows the student to attain his educational goal more rapidly than any other form of assistance. The terms "fellowships" and "traineeships" are frequently used interchangeably, and, as mentioned previously, are considered together in this report for purposes of simplification.

Fellowships and traineeships were the predominant types of major support of full-time graduate students in doctorate departments in 1969. The 41,734 fellows and trainees comprised 30 percent of full-time enrollment in such departments. The ranking of areas of science in terms of number of fellowship-traineeship holders is shown in chart 4. Particular fields of science with the largest numbers of fellows-trainees were: chemistry, 3,293; physics, 2,415; biology, 2,389; political science, 2,304; mathematics, 2,124; and economics, 2,092 (appendix table C–7).

When the detailed fields of science were ranked from highest to lowest for all doctorate departments —in terms of relative numbers of full-time students supported primarily by fellowships and traineeships— biochemistry placed at the top of the list, and received slightly more support in 1969 than in 1967. Students in applied mathematics received the least amount of support through this mechanism, 18 percent in 1969, a decrease from 24 percent in 1967 (table 3).

The number of U.S. citizen fellows and trainees totaled 36,462, or 32 percent of total graduate students of U.S. citizenship. Of fellows and trainees with U.S. citizenship, 24 percent were enrolled in the life sciences, 21 percent in the social sciences, 18 percent in engineering, 17 percent in the physical sciences, 13 percent in psychology, and 7 percent in mathematics. When classified according to their level of study, 29 percent of those U.S. citizens supported by fellowships and traineeships were in their first year of study and 71 percent were advanced students.

Chart 4. **Full-time graduate students holding fellowships and traineeships in doctorate departments, 1969** a/



a/ Refers to graduate students receiving their major support through fellowships and traineeships.

SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-9b).

Less than 19 percent of foreign students studying in this country relied upon fellowships and traineeships for their support. As stated previously, foreign students are not eligible for support of this type under two Federal agency programs, the Atomic Energy Commission and the National Science Foundation. Of the 5,272 foreign fellows and trainees, the social sciences enrolled 30 percent; engineering, 28 percent; life sciences, 18 percent; physical sciences, 15 percent; mathematical sciences, 7 percent; and psychology, 2 percent (appendix table C–8).

An analysis of 2,338 doctorate departments reporting consistently since 1967 indicated an overall reduc-

Table 3.—*Proportion of full-time graduate students in doctorate departments receiving major support from fellowships and traineeships, ranked by field of science, 1967 and 1969* [a]

Field of science [b]	1967	1969
Number of departments	2,580	2,894
	(Percent)	
All fields	32.6	29.6
Biochemistry	53.4	55.7
Physiology	54.1	50.8
Microbiology	44.7	47.4
Nuclear engineering	50.0	45.7
Pharmacology	46.8	45.1
History and philosophy of science	48.8	42.0
Other life sciences	44.8	41.7
Psychology	41.7	39.8
Biology	40.7	38.0
Anthropology	41.8	36.4
Sociology	40.8	36.0
Astronomy	35.6	34.6
Linguistics	36.8	34.6
Statistics	35.6	34.1
Chemical engineering	38.8	32.8
Engineering science	35.7	32.8
Other engineering	33.7	31.5
Political science	33.8	30.7
Economics	34.7	30.4
Petroleum engineering	38.5	29.2
Civil engineering	35.8	28.4
Mining engineering	29.6	28.4
Sociology and anthropology	32.1	28.0
Aeronautical engineering	31.5	26.4
Geography	29.1	25.5
Agricultural engineering	29.2	25.4
Geosciences	29.6	24.6
Oceanography	31.1	24.6
Agricultural economics	24.6	24.5
Chemistry	28.5	24.2
Zoology	26.3	24.1
Industrial science	23.2	23.4
Mathematics	26.3	23.4
Metallurgical and materials engineering	28.7	22.9
Botany	26.9	22.0
Mechanical engineering	27.0	21.9
Physics	25.4	21.9
Agriculture	22.5	21.6
Atmospheric sciences	23.5	21.4
Electrical engineering	26.8	21.0
Applied mathematics	24.1	18.2

[a] Data for 1967 were published in *Support of Full-Time Graduate Students in the Sciences, Fall 1967* (NSF 69–34), p. 119; data for 1969 are shown in appendix table C–7.

[b] See appendix table B–3 for list of departmental titles grouped into fields of science.

tion of 6.0 percent in the number of graduate students with fellowship-traineeship support in the period 1968–69, after showing a slight increase of 1.8 percent from 1967 to 1968. The number of U.S. citizens in this category decreased from 1968 to 1969 after increasing from 1967 to 1968. In contrast, foreign students increased in enrollment from 1967 to 1968 and from 1968 to 1969, but at a lower rate in the latter period (table 4).

Table 4.—*Percent change in the number of full-time graduate students receiving major support as fellows and trainees, by citizenship and level of study, 1967–68 and 1968–69* [a]

Citizenship and level of study	Percent change	
	1967–68	1968–69
Total	1.8	−6.0
First year	−11.5	−1.2
Beyond first year	8.0	−7.9
U.S. citizens	1.2	−7.2
First year	−12.8	−2.3
Beyond first year	7.6	−9.0
Foreign students	6.5	3.4
First year	−2.6	5.3
Beyond first year	12.2	2.4

[a] Based on data for 2,338 departments that accounted for 87 percent of full-time graduate enrollment in doctorate departments in 1969.

Research Assistantships

An appointment as a research assistant requires services on research projects and often affords the graduate student the opportunity to apply this research toward his thesis requirement. Students in this category accounted for almost 22 percent of the full-time enrollment in doctorate departments in 1969, and the largest numbers were primarily engaged in studies within the physical and engineering areas of science (chart 5). Fields of science with large numbers of research assistants were physics, 4,051; chemistry, 3,647; agriculture, 2,840; and electrical engineering, 2,027 (appendix table C–7).

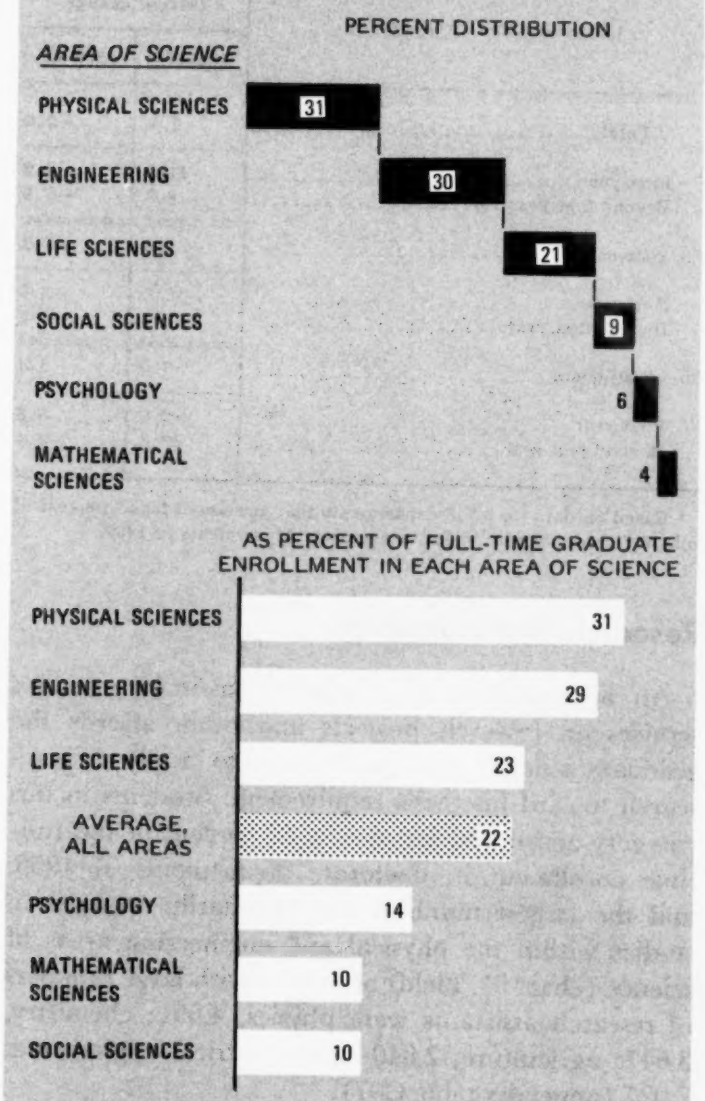
For all doctorate departments reporting in 1967 and 1969, the field "metallurgical and materials engineering" ranked first in terms of relative number of full-time students supported through research assistantships. Ranking lowest on the scale in both years was "history and philosophy of science," in which research assistants comprised only 4 percent of the field total in 1967 and 3 percent in 1969 (table 5).

Relatively more foreign students than U.S. citizens held research assistantships in 1969. Of the 113,167 full-time students with U.S. citizenship, only 21,466, or 19 percent, received major support through research assistantships in 1969. Foreign students using this mechanism comprised 32 percent of the 28,032 total number of foreign graduate students (appendix table C–8).

For U.S. students, the physical sciences accounted for 34 percent of the research assistantships, but engi-

819

Chart 5. **Full-time graduate students holding research assistantships in doctorate departments, 1969** [a/]



a/ Refers to graduate students receiving their major support through research assistantships.

SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-9b).

Table 5.—Proportion of full-time graduate students in doctorate departments receiving major support from research assistantships, ranked by field of science, 1967 and 1969 [a]

Field of science [b]	1967	1969
Number of departments	2,580	2,894
	(Percent)	
All fields	23.1	21.6
Metallurgical and materials engineering	58.2	59.5
Atmospheric sciences	51.2	47.8
Agriculture	50.2	47.6
Agricultural economics	48.3	46.1
Oceanography	46.9	46.1
Agricultural engineering	41.9	45.5
Astronomy	39.7	39.6
Physics	36.3	36.8
Mining engineering	43.0	33.4
Aeronautical engineering	32.4	33.0
Chemical engineering	32.2	31.4
Other engineering	31.3	30.1
Engineering science	29.4	29.7
Petroleum engineering	38.5	28.6
Applied mathematics	32.6	28.1
Electrical engineering	25.5	27.0
Mechanical engineering	26.4	26.8
Chemistry	27.8	26.7
Botany	30.0	26.0
Civil engineering	28.7	26.5
Biochemistry	31.1	24.9
Nuclear engineering	22.9	24.2
Geosciences	19.1	21.1
Statistics	20.4	18.9
Microbiology	22.6	18.8
Industrial science	15.9	17.4
Pharmacology	18.6	17.1
Zoology	17.3	15.6
Physiology	15.6	14.4
Psychology	16.9	14.2
Other life sciences	14.5	13.8
Economics	12.9	11.9
Sociology	14.0	9.8
Biology	11.5	9.5
Sociology and anthropology	10.6	8.5
Linguistics	7.6	7.3
Political science	6.2	7.3
Geography	6.6	5.9
Anthropology	6.9	5.7
Mathematics	6.6	5.7
History and philosophy of science	3.6	2.5

[a] Data for 1967 were published in *Support of Full-Time Graduate Students in the Sciences, Fall 1967* (NSF 69–34), p. 119; data for 1969 are shown in appendix table C–7.

[b] See appendix table B–3 for list of departmental titles grouped into fields of science.

neering provided 47 percent of research assistantships held by foreign students. Mathematical sciences ranked lowest with U.S. citizens, 4 percent, and psychology ranked lowest with foreign students, less than 2 percent.

Further analysis of students holding research assistantships indicated that 24,132, or 79 percent, were in their second year of study or beyond. Of these, 35 percent were studying in the physical sciences, 28 percent in engineering, 20 percent in the life sciences, 8 percent in the social sciences, 5 percent in psychology, and the remaining 4 percent in the mathematical sciences. First-year students were distributed in a similar pattern, although engineering ranked first (appendix table C–9b).

The number of students supported by research assistantships declined 1.1 percent from 1967 to 1968 and 0.8 percent from 1968 to 1969, as reported by the 2,338 doctorate departments applying consistently for 3 years in the NSF traineeship program. This decline was considerably less than that experienced by fellow-

ship-traineeship students in the latter period (table 4). Even though first-year U.S. students increased in numbers from 1968 to 1969 by 2.2 percent, the decline in the number enrolled beyond their first year offset the increase and resulted in a net decrease of 4.4 percent of U.S. citizen research assistants. Table 6 shows that foreign research assistants increased substantially, while U.S. citizen-research assistants declined.

Table 6.—*Percent change in the number of full-time graduate students receiving major support as research assistants, by citizenship and level of study, 1967–68 and 1968–69* [a]

Citizenship and level of study	Percent change	
	1967–68	1968–69
Total	−1.1	−0.8
First year	−7.8	2.8
Beyond first year	.6	−1.6
U.S. citizens	−4.2	−4.4
First year	−13.4	2.2
Beyond first year	−1.9	−5.9
Foreign students	8.4	9.1
First year	8.7	4.0
Beyond first year	8.3	10.4

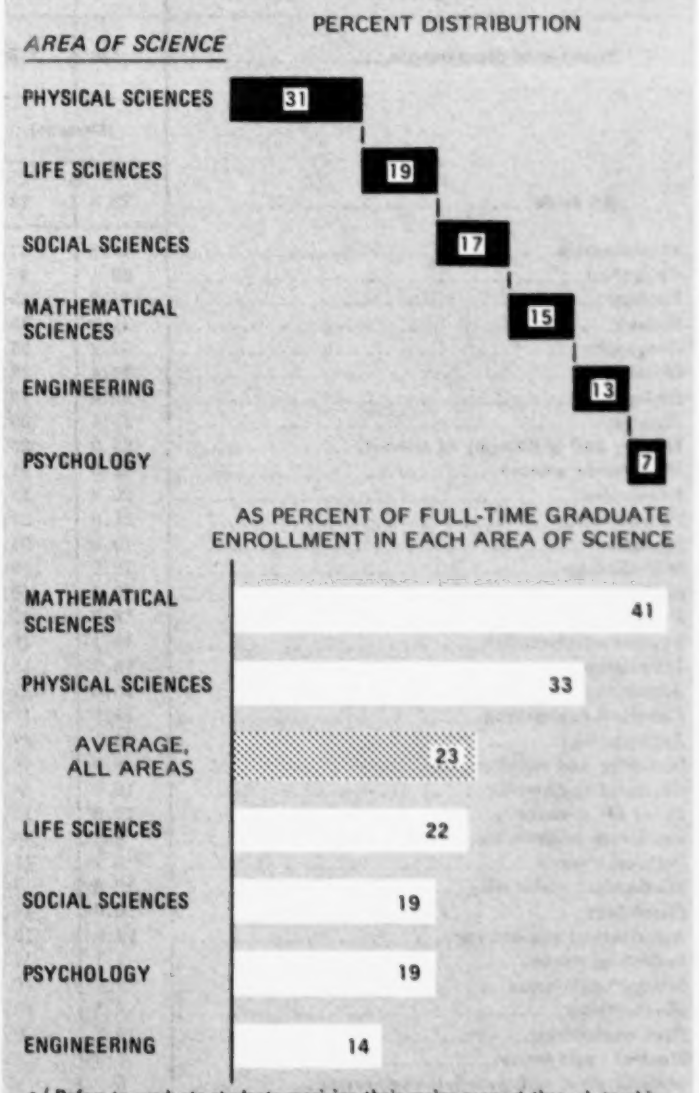
[a] Based on data for 2,338 departments that accounted for 87 percent of full-time graduate enrollment in doctorate departments in 1969.

Teaching Assistantships

Teaching assistantships tend to be a demanding form of financial assistance, in terms of time and effort required from graduate students. They are the least popular support mechanism, since the duty assignments are of such a nature that they tend to lengthen the time interval required for students to complete their graduate work. However, 32,991 students in 1969—or 23 percent of full-time enrollment —were supported through teaching assistantships. These students, like those holding research assistantships, were concentrated in the physical sciences (chart 6). The fields providing the most teaching assistants were chemistry, 5,540; mathematics, 4,276; and physics, 3,284 (appendix table C–7).

In a ranking of the 41 detailed fields of science reported by all doctorate departments, the field "mathematics" was first in both 1967 and 1969. "History and philosophy of science," which ranked last in research assistantship support, was ranked ninth in both 1967 and 1969 in relative number of teaching assistantships.

Chart 6. **Full-time graduate students holding teaching assistantships in doctorate departments, 1969** a/



a/ Refers to graduate students receiving their major support through teaching assistantships.

SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-9a).

The proportion of graduate enrollment supported through teaching assistantships was lowest in agricultural economics in both years, with only slight changes in rankings and relative support of the other fields of science, indicating a fairly stable pattern for most fields (table 7).

Students holding teaching assistantships in their first year of study were found primarily in the physical science area (36 percent), followed by the life sciences, 19 percent. Beyond-first-year students were also primarily enrolled in the physical sciences (with 28 percent), but the social sciences ranked second, with 19 percent (appendix table C–9).

Teaching assistantship support gained in 1969, es-

Table 7.—*Proportion of full-time graduate students in doctorate departments receiving major support from teaching assistantships, ranked by field of science, 1967 and 1969* [a]

Field of science [b]	1967	1969
Number of departments	2,580	2,894
	(Percent)	
All fields	22.3	23.4
Mathematics	43.7	47.0
Chemistry	38.1	40.6
Zoology	36.2	39.3
Botany	31.0	35.4
Geography	31.2	33.5
Geosciences	30.4	32.5
Biology	29.1	30.2
Physics	27.4	29.8
History and philosophy of science	23.9	26.2
Engineering science	16.0	21.9
Economics	20.4	21.5
Pharmacology	21.8	21.4
Statistics	19.8	21.0
Microbiology	19.9	19.6
Sociology	19.4	19.4
Psychology	18.7	19.0
Applied mathematics	14.1	18.8
Linguistics	16.7	18.8
Astronomy	15.4	17.8
Electrical engineering	16.0	17.8
Anthropology	16.5	17.6
Sociology and anthropology	19.2	16.8
Chemical engineering	15.0	16.3
Other life sciences	10.9	16.2
Petroleum engineering	9.2	16.1
Political science	15.7	15.7
Mechanical engineering	12.8	14.5
Physiology	16.6	14.5
Aeronautical engineering	12.8	13.4
Industrial science	9.1	11.9
Mining engineering	9.5	10.7
Biochemistry	8.5	10.6
Civil engineering	10.9	10.2
Nuclear engineering	7.6	8.8
Metallurgical and materials engineering	5.7	8.7
Agricultural engineering	5.9	8.3
Agriculture	6.6	8.3
Other engineering	6.8	6.2
Atmospheric sciences	3.7	5.5
Oceanography	4.0	4.5
Agricultural economics	2.9	3.3

[a] Data for 1967 were published in *Support of Full-Time Graduate Students in the Sciences, Fall 1967* (NSF 69–34), p. 119; data for 1969 are shown in appendix table C–7.

[b] See appendix table B–3 for list of departmental titles grouped into fields of science.

pecially with foreign students, in contrast to the net declines in both fellowship-traineeship support and research assistantships. An examination of the doctorate departments reporting consistently for 3 years indicated an increase of 5.0 percent from 1967 to 1968 and 3.6 percent from 1968 to 1969 in full-time graduate students supported through teaching assistantships (table 8).

Table 8.—*Percent change in the number of full-time graduate students receiving major support as teaching assistants, by citizenship and level of study, 1967–68 and 1968–69* [a]

Citizenship and level of study	Percent change	
	1967–68	1968–69
Total	5.0	3.6
First year	−.7	2.9
Beyond first year	8.3	4.0
U.S. citizens	2.7	1.4
First year	−3.9	1.3
Beyond first year	6.6	1.5
Foreign students	16.6	13.4
First year	17.0	9.8
Beyond first year	16.3	15.2

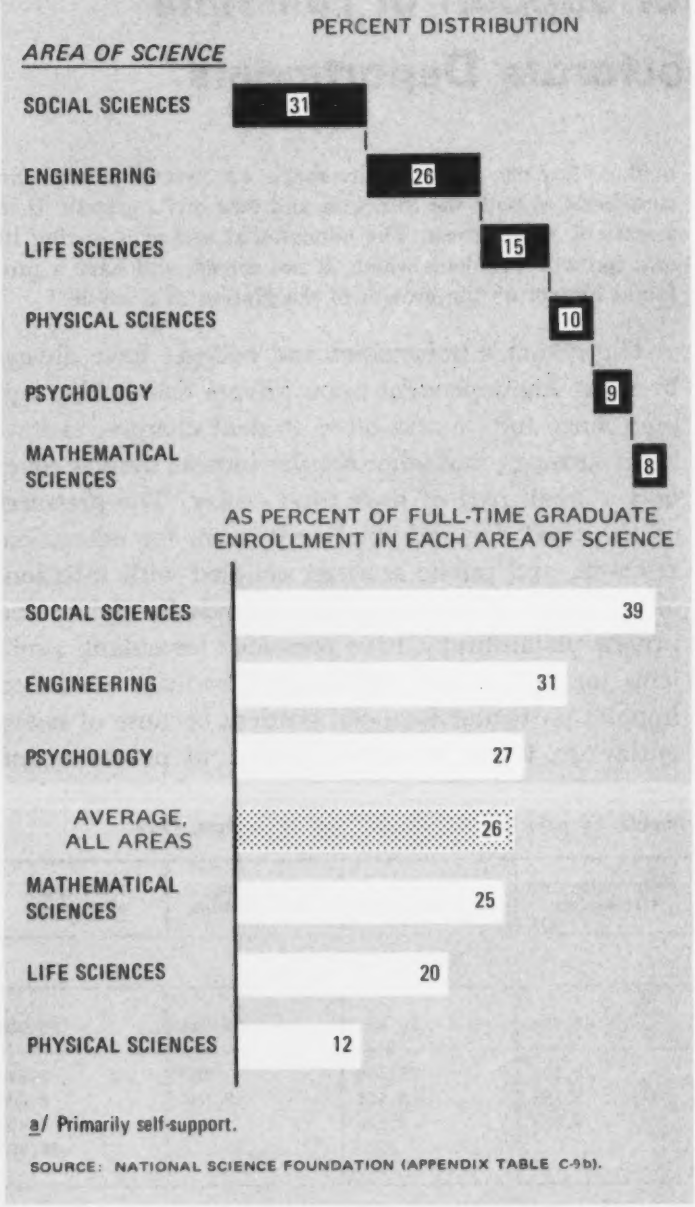
[a] Based on data for 2,338 departments that accounted for 87 percent of full-time graduate enrollment in doctorate departments in 1969.

Other Types of Support

The remaining 26 percent of full-time students attending doctorate-granting institutions in 1969 were supported by a variety of "other" mechanisms which were outside the three major types discussed previously. These students were primarily dependent upon themselves, loans, or their families for support. The social sciences enrolled the largest number of students in this category, and engineering ranked next (chart 7). Fields of science with the largest numbers of students in this category were political science (3,470), psychology (3,227), electrical engineering (2,573), economics (2,492), and mathematics (2,169) (appendix table C–7).

Of the 36,003 full-time students primarily supported by "other" mechanisms, including self-support, 80 percent were U.S. citizens. These students concentrated their studies in the social sciences area, while foreign students emphasized engineering.

Chart 7. **Full-time graduate students receiving major support through "other" mechanisms, 1969** [a/]



a/ Primarily self-support.

SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-9b).

The doctorate departments that reported consistently for 3 years experienced marked increases in the number of students supported by other mechanisms. This contrasts with the reductions in the number of students supported by fellowships–traineeships and research assistantships, and the reduced rate of growth in the number of teaching assistantships. This difference seems to indicate that when outside support tapers off, graduate students rely more upon themselves and their families to finance their graduate education. Table 9 indicates the changes in enrollment by citizenship and level of study for the period 1967–68 and 1968–69.

Further details on this form of support will be discussed in the succeeding section, where types of support are related directly to the various sources of financial support utilized by graduate students.

Table 9.—Percent change in the number of full-time graduate students receiving major support through "other" mechanisms, by citizenship and level of study, 1967–68 and 1968–69 [a]

Citizenship and level of study	Percent change	
	1967–68	1968–69
Total	6.0	11.6
First year	−.3	13.6
Beyond first year	11.6	10.0
U.S. citizens	4.1	10.5
First year	−4.2	12.7
Beyond first year	11.2	8.9
Foreign students	14.5	16.2
First year	15.6	16.9
Beyond first year	13.4	15.6

[a] Based on data for 2,338 departments that accounted for 87 percent of full-time graduate enrollment in doctorate departments in 1969.

Section IV. Sources of Major Support of Full-Time Graduate Students in Doctorate Departments

It is generally recognized that one of our national goals is nurturing and fostering the development and growth of graduate education, in order to improve our social, economic, and cultural position. Without question, the future scientific and technological potentials of the economy are closely interlinked with the strength and vitality of the Nation's universities and colleges. Recently, the President's National Goals Research Staff presented its report, *Toward Balanced Growth: Quantity with Quality,*[11] in which it was stated that:

"Taken all in all, the educational system, which is the crucial single institution for the development of our citizenry so that they can live happily, shape our system wisely, and contribute to both the direction and rate of its growth, is in a state of severe stress. The educational system is having its own 'growth' problems which, if not solved, will have a profound impact on the growth of the Nation as a whole."

The Nation's universities and colleges have always been heavily dependent upon private and public support, since tuition and other student charges, endowment earnings, and other regular income sources cover only a small part of their total outlay. The pressures of increased demands in recent years for education, research, and public services, coupled with inflationary pressures and competing demands for public and private philanthropy, have presented formidable problems for U.S. higher education. Graduate education imposes particular financial burdens because of heavy outlays to retain qualified faculty, to purchase and

[11] U.S. President, *Toward Balanced Growth: Quantity with Quality.* Report of the National Goals Research Staff (Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office, 1970), p. 99.

Table 10.—*Full-time graduate students in doctorate departments, by principal source and type of support, 1969*

Principal source of support	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
	Number				
Total	141,199	41,734	30,471	32,991	36,003
U.S. Government	51,620	28,707	19,646	327	2,940
Institutions and State and local governments	50,471	7,191	8,451	32,524	2,305
Other outside sources [a]	12,801	5,836	2,374	140	4,451
Self-support	26,307				26,307
	Percent distribution, by principal source				
Total	100.0	100.0	100.0	100.0	100.0
U.S. Government	36.6	68.8	64.5	1.0	8.2
Institutions and State and local governments	35.7	17.2	27.7	98.6	6.4
Other outside sources	9.1	14.0	7.8	.4	12.4
Self-support	18.6				73.1
	Percent distribution, by type				
Total	100.0	29.6	21.6	23.4	25.5
U.S. Government	100.0	55.6	38.1	.6	5.7
Institutions and State and local governments	100.0	14.2	16.7	64.4	4.6
Other outside sources	100.0	45.6	18.5	1.1	34.8
Self-support	100.0				100.0

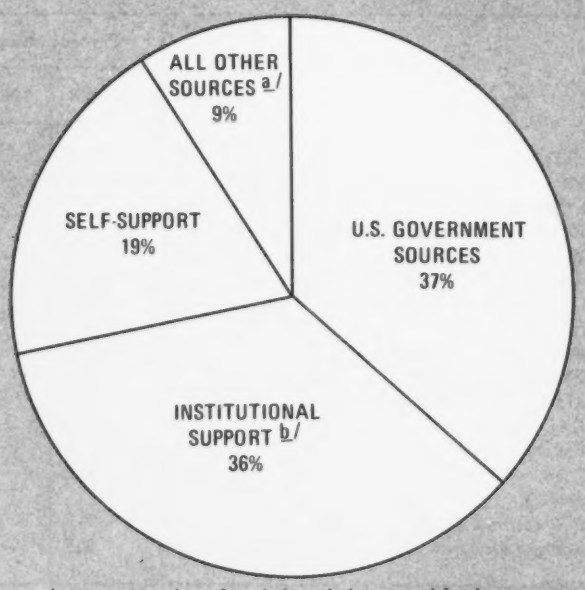
[a] See appendix tables C–11a and C–11b for separate data on industry, private foundations, foreign, and other outside sources of support.

maintain costly facilities and equipment, and to provide stipend support for graduate students. Financial stringencies of recent years, including the leveling of Federal support of graduate education, have had consequential impacts on graduate enrollment and the methods used by graduate students to finance their education. This section is concerned with the major sources of financing utilized by full-time graduate science students in doctorate institutions, by type of support, area of science, and citizenship in 1969, and trends in such financing, 1967–69 (appendix tables C–10a through C–15g).

In 1969, outside sources provided major support to 81 percent of the full-time science graduate students;[12] the remaining 19 percent relied upon self-support, including savings, loans, part-time employment, and family and other types of assistance. The U.S. Government was the predominant source of major financial support for 37 percent of the full-time graduate students. Ranking next were institutions and State and local governments (36 percent), and other outside sources, such as industry, private foundations, and foreign organizations (9 percent) (table 10 and chart 8).

[12] The term "outside sources," as used in this report, refers to all sources of support other than self-support.

Chart 8. **Major sources of support of full-time graduate students in doctorate departments, 1969**



a/ Includes private foundations, industry, and foreign sources.
b/ Includes institutions and State and local governments.

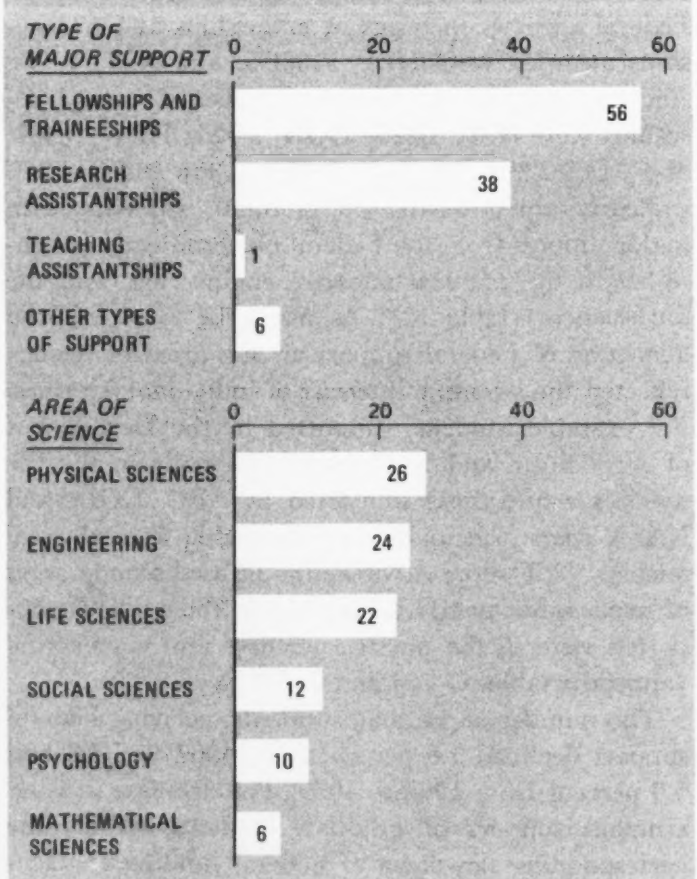
SOURCE: NATIONAL SCIENCE FOUNDATION (TABLE 10).

U.S. Government

Federal agencies were reported as supporting 51,620 full-time graduate students in doctorate departments in 1969. The principal agencies, in terms of the relative number of students supported, were the Department of Health, Education, and Welfare (HEW), 40 percent; National Science Foundation (NSF), 25 percent; Department of Defense (DOD), 10 percent; Atomic Energy Commission (AEC), 6 percent; and National Aeronautics and Space Administration (NASA), 5 percent. The HEW programs supporting the largest number of students were those of the National Institutes of Health (NIH) and those funded through the National Defense Education Act (NDEA), which accounted for 24 percent and 13 percent, respectively, of all federally supported students (appendix table C–12).

The large majority of full-time graduate students supported by Federal agencies were fellows and trainees, and research assistants (chart 9). The principal

Chart 9. **Percent distribution of graduate students supported by the U.S. Government, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLES C-10b and C-11b).

Table 11.—*Full-time graduate students in doctorate departments, by principal source of support and area of science, 1969*

Principal source of support	Total	Engineering	Physical sciences	Mathematical sciences	Life sciences	Psychology	Social sciences
	Number						
Total	141,199	30,820	30,175	11,727	27,588	11,918	28,971
U.S. Government	51,620	12,334	13,187	3,223	11,513	5,127	6,236
Institutions and State and local governments	50,471	8,025	12,497	5,886	9,879	3,902	10,282
Other outside sources [a]	12,801	4,979	1,990	578	2,085	708	2,461
Self-support	26,307	5,482	2,501	2,040	4,111	2,181	9,992
	Percent distribution, by principal source						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
U.S. Government	36.6	40.0	43.7	27.5	41.7	43.0	21.5
Institutions and State and local governments	35.7	26.0	41.4	50.2	35.8	32.7	35.5
Other outside sources	9.1	16.2	6.6	4.9	7.6	5.9	8.5
Self-support	18.6	17.8	8.3	17.4	14.9	18.3	34.5
	Percent distribution, by area of science						
Total	100.0	21.8	21.4	8.3	19.5	8.4	20.5
U.S. Government	100.0	23.9	25.5	6.2	22.3	9.9	12.1
Institutions and State and local governments	100.0	15.9	24.8	11.7	19.6	7.7	20.4
Other outside sources	100.0	38.9	15.5	4.5	16.3	5.5	19.2
Self-support	100.0	20.8	9.5	7.8	15.6	8.3	38.0

[a] See appendix tables C–10a and C–10b for separate data on industry, private foundations, foreign, and other outside sources of support.

Federal agencies in terms of fellowships and traineeships awarded were HEW, 16,895, and NSF, 7,255. Agencies supporting the largest number of research assistants were NSF, 5,225; DOD, 3,525; HEW, 3,492, and AEC, 2,395 (appendix tables C–11a and C–11b).

Nearly three-fourths of graduate students with major support from the Federal Government were enrolled in the physical sciences, engineering, and the life sciences (table 11). As might be expected, the allocation of Federal support among areas of science reflected the scientific interests of individual agencies. For example, students supported by the Department of Agriculture and NIH were principally in the life sciences, while those supported by AEC, DOD, and NASA were principally in engineering and physical sciences. NSF support was quite diffused among areas of science, but nearly three-fifths of the students supported were in the physical sciences and engineering (appendix tables C–10a and C–10b).

The number of graduate students receiving Federal support declined 1.6 percent from 1967 to 1968 and 5.9 percent from 1968 to 1969. The decrease in Government support of graduate students reflects the corresponding slowdown of Federal funding of scientific activities in universities and colleges that began in the mid-1960's (table 12).

Table 12.—*Percent change in the number of full-time graduate students in doctorate departments supported by the U.S. Government, 1967–68 and 1968–69* [a]

Item	Percent change	
	1967–68	1968–69
Total	−1.6	−5.9
Type of support:		
Fellowships and traineeships	.1	−10.2
Research assistantships	−3.1	−2.0
Teaching assistantships	−22.5	30.9
Other types of support	−6.9	13.1
Area of science:		
Engineering	−5.6	−5.3
Physical sciences	−3.5	−8.9
Mathematical sciences	−2.8	−8.2
Life sciences	1.2	−5.0
Psychology	5.6	3.0
Social sciences	2.6	−7.3
Citizenship:		
U.S. citizens	−2.6	−7.6
Foreign students	6.7	6.8

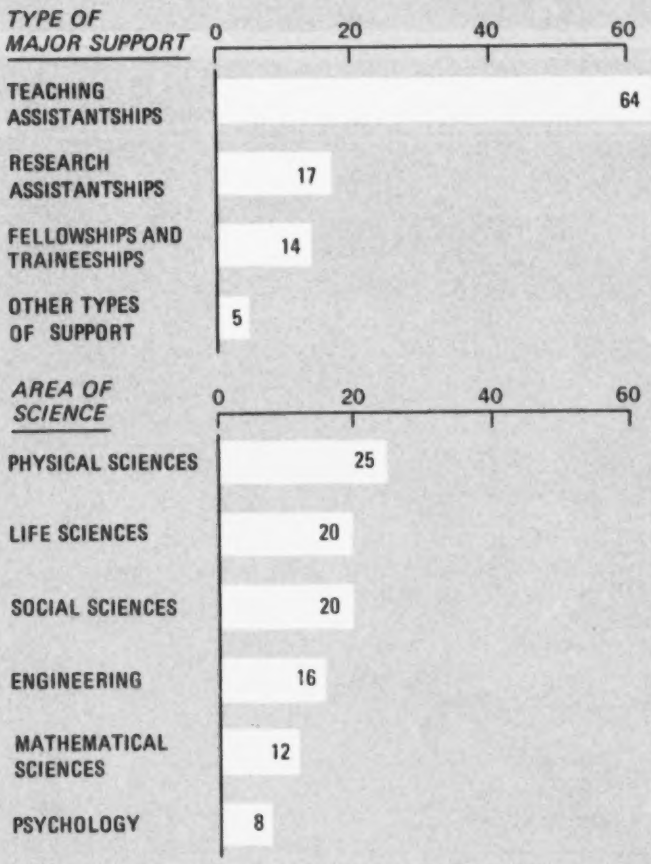
[a] Based on 2,338 doctorate departments, as shown in appendix tables C–15a through C–15g.

Institutional Support

In publicly supported institutions of higher education, it is often difficult to separate the funds received from the State or local government from those that might be considered the institution's own funds that are not under the direct control of the government. As a consequence, funds from these sources are grouped, for the purposes of this report, into a single category, "institutional support." The 50,471 students receiving such support constituted 36 percent of all full-time students in doctorate departments in 1969, or nearly as large as the number of U.S. Government-supported students (appendix table C–10b).

The physical sciences, social sciences, and life sciences accounted for nearly two-thirds of all graduate students supported by institutions (chart 10). Chemistry, with 6,438 students, ranked first in terms of institutional support, followed by mathematics (4,916) and physics (4,185) (appendix table C–14).

Chart 10. **Percent distribution of graduate students supported by institutions and State and local governments, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLES C-10b and C-11b).

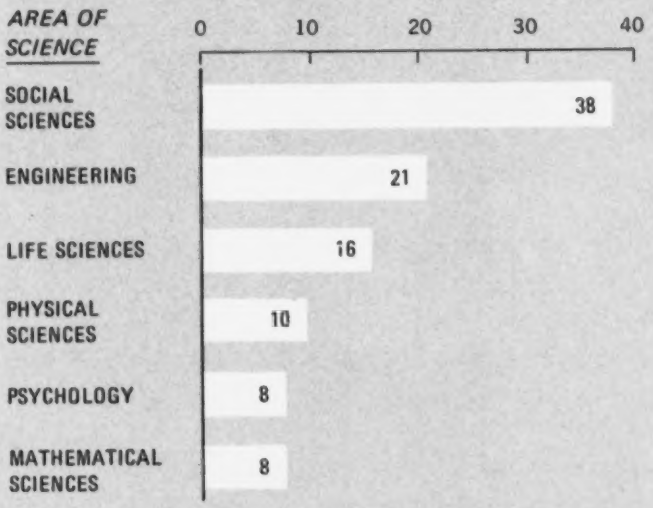
Trend data developed in this report to examine certain characteristics of graduate students were grouped in three categories: U.S. Government, other U.S. sources, and foreign sources. Students receiving institutional support comprised the largest group (about 58 percent) of the category "other U.S. sources." Thus, trend data applying to the overall category may be considered reasonably representative of students receiving institutional support (appendix tables C–15a through C–15g).

The number of graduate students receiving support from other U.S. sources increased 6.4 percent from 1967 to 1968 and 6.0 percent from 1968 to 1969, while students supported by U.S. Government sources declined in both periods, as mentioned earlier. In each of the areas of science, the number of graduate students supported by "other U.S. sources" increased. The increase was greatest in the social sciences, which rose 7.9 percent from 1967 to 1968, and 11.5 percent from 1968 to 1969.

Other Outside Support

Graduate students relying upon all other outside support totaled 12,801, or 9 percent of the total in 1969. Those supported by private industry ranked first in number (4,568), followed by private foundations (3,836), foreign sources (2,245), and all other U.S. sources (2,152), as indicated in appendix table C–10a.

Chart 11. **Percent distribution of graduate students depending upon self-support, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-10b).

Fellowships and traineeships were the predominant form of student assistance in this category, 46 percent; followed by "other" mechanisms, 35 percent; research assistantships, 19 percent; and teaching assistantships, only 1 percent (table 10).

Self-Support

The 26,307 graduate students who were reported as self-supporting in doctorate departments in 1969 accounted for 19 percent of the total number of full-time graduate students and were concentrated in the social sciences as shown in chart 11. All of these students were, obviously, classified into the "other" mechanisms form of support. Particular fields of science with the largest numbers of self-supporting students were political science (3,114), economics (2,270), psychology (2,181), electrical engineering (1,637), and mathematics (1,591), as shown in appendix table C–14.

Section V. Faculty and Postdoctorals in Doctorate Departments

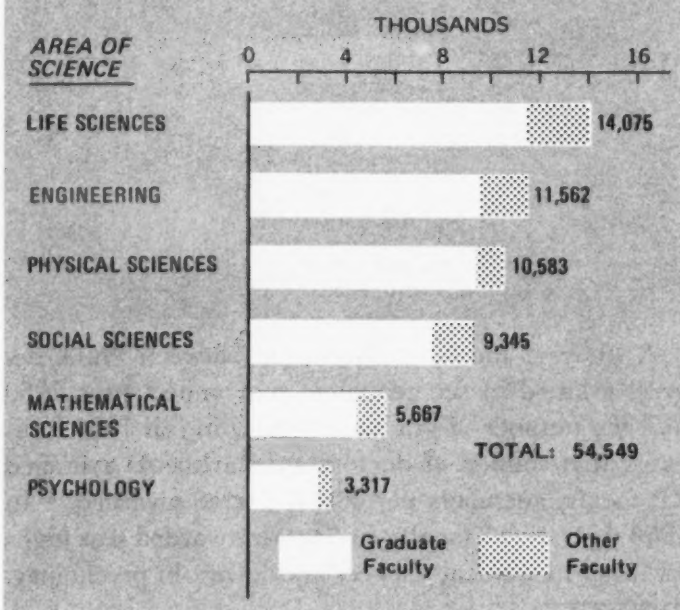
Faculty

The term "faculty," as used in this report and for the purposes of the NSF traineeship program, refers to staff with an academic rank of instructor or above who are significantly involved in the graduate or undergraduate program of the institution in teaching one or more courses or seminars, or in directing the research of one or more students. Those with full-time appointments are differentiated from part-time faculty whose major responsibilities are outside of the department, such as university administrators, deans, affiliate professors, extension service staff, museum staff, etc. "Graduate" faculty refers to those who teach one or more graduate courses or seminars and/or direct the research of one or more graduate students.

The number of full-time faculty in doctorate departments totaled 54,549 in 1969, of which 84 percent were identified as full-time graduate faculty (chart 12). Fields of science reporting the largest numbers of faculty members were mathematics, 4,963; physics, 4,361; chemistry, 4,077; agriculture, 3,771; and psychology, 3,317 (appendix table C–16).

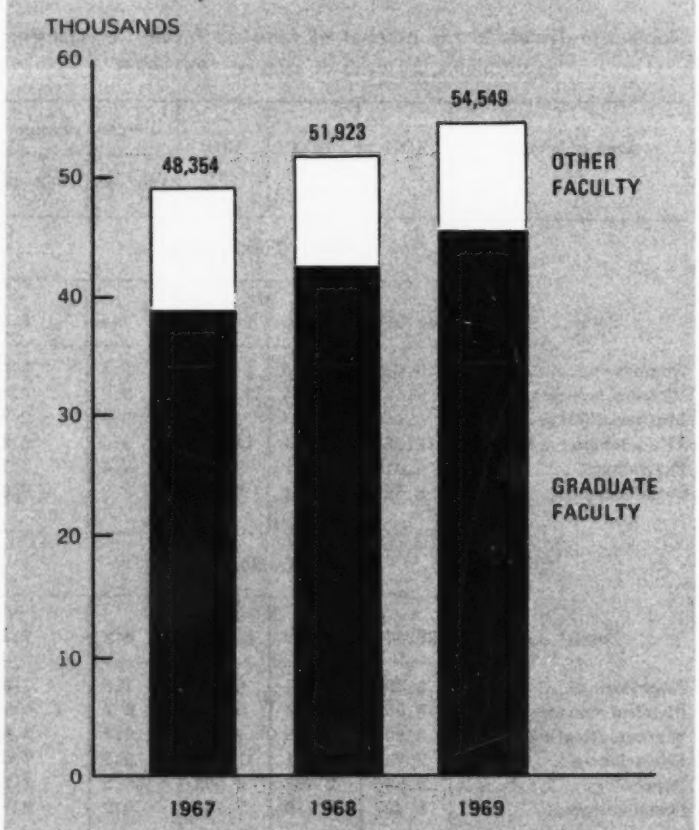
As stated earlier, although total graduate enrollment in the sciences increased from 1967 to 1969 in doctorate departments, it has shown a slowdown in its rate of growth. This reduced growth rate was also apparent in the number of full-time faculty reported by these same doctorate departments. Mathematical sciences experienced the greatest change, from an increase of 7.1 percent during 1967–68 to only 2.3 per-

Chart 12. **Number of full-time faculty in doctorate departments, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-17).

Chart 13. **Number of full-time faculty in doctorate departments, 1967-69**



SOURCE: NATIONAL SCIENCE FOUNDATION (TABLE 13).

cent for 1968–69. Every area of science showed a declining rate of increase from 1968 to 1969 (table 13 and chart 13).

A look at the full-time graduate faculty alone shows a similar pattern with, again, a rather consequential drop in the rate of increase in mathematical sciences faculty for 1968–69. In an earlier discussion of teaching assistantships, it was pointed out that in the mathematical sciences there was more concentration of students using this aid mechanism than any other type in 1969, and it may be due to the lessening amount of faculty involvement in this field, which has resulted in a greater dependence upon teaching assistants (appendix table C–7).

Relationship to graduate enrollment and Ph.D. degrees awarded. A comparison of full-time graduate enrollment with full-time graduate faculty in 1969 reveals an overall ratio of 3.1 graduate students per faculty member, a slight reduction from the ratio of 3.3 to 1 reported for 1966 in the first report of this series.[13] The highest graduate student-faculty ratio occurred in psychology, and the lowest in the life sciences (chart 14).

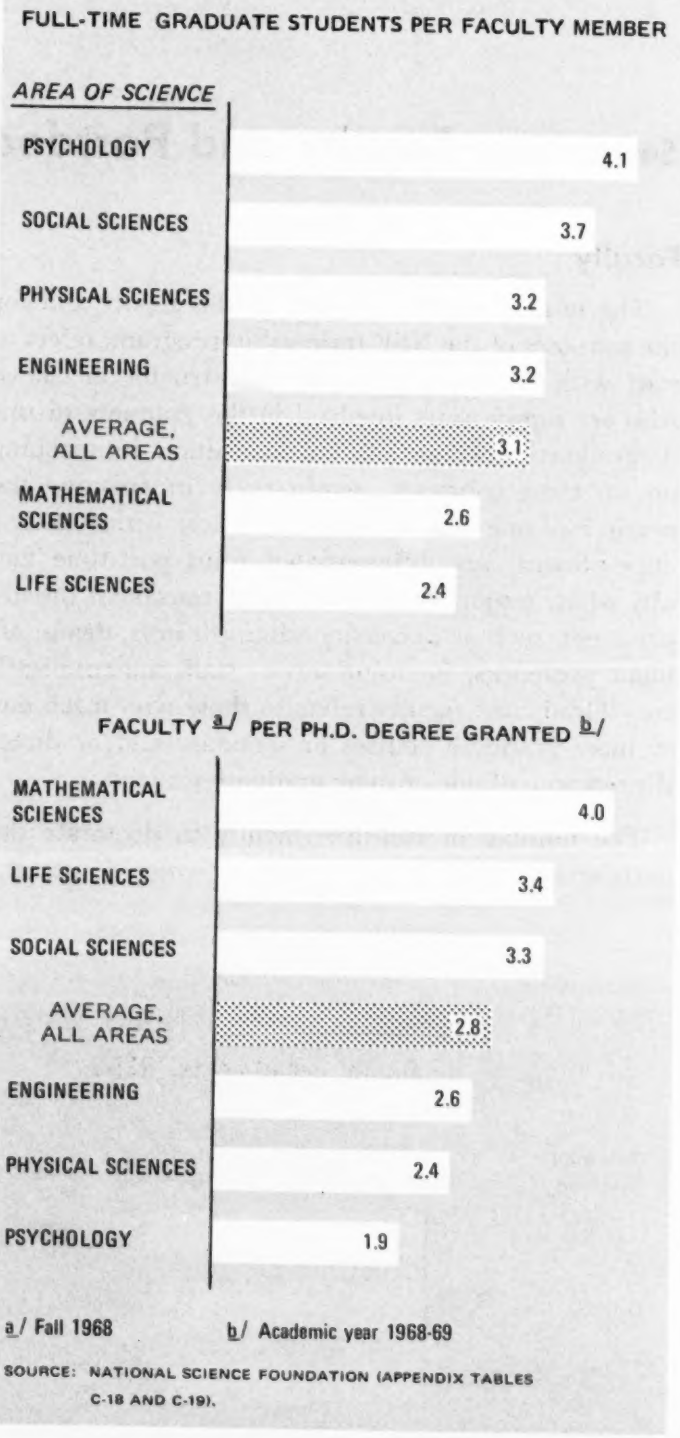
[13] National Science Foundation, *Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1965 and 1966* (NSF 68–13) (Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office), p. 59.

Table 13.—*Trends in the number of full-time faculty in doctorate departments, by area of science, 1967–69* [a]

Area of science	1967	1968	1969	Percent change	
				1967–68	1968–69
	Total faculty				
Total	48,354	51,923	54,549	7.4	5.1
Engineering	10,540	11,155	11,562	5.8	3.6
Physical sciences	9,558	10,135	10,583	6.0	4.4
Mathematical sciences	5,169	5,537	5,667	7.1	2.3
Life sciences	12,224	13,251	14,075	8.4	6.2
Psychology	2,815	3,081	3,317	9.4	7.7
Social sciences	8,048	8,764	9,345	8.9	6.6
	Graduate faculty				
Total	39,078	42,674	45,687	9.2	7.1
Engineering	8,395	9,034	9,665	7.6	7.0
Physical sciences	8,303	8,874	9,414	6.9	6.1
Mathematical sciences	3,804	4,268	4,471	12.2	4.8
Life sciences	9,723	10,681	11,497	9.9	7.6
Psychology	2,385	2,707	2,902	13.5	7.2
Social sciences	6,468	7,110	7,738	9.9	8.8

[a] Based on Departmental Summaries from 2,894 doctorate departments, as shown in appendix E.

Chart 14. **Full-time graduate faculty in doctorate departments, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLES C-18 AND C-19).

A study of the interrelationship between Ph.D. degrees granted in the academic year ended June 1969 and the number of graduate faculty in fall 1968 indicated that staffing of doctorate departments averaged 2.8 faculty members per Ph.D. degree awarded.[14] In 1968 the ratio of faculty-to-degrees awarded was highest in mathematical sciences and lowest in psychology.

[14] Because fall 1968 faculty comprise the departmental staff for academic year 1968–69, it was relevant to compare faculty data for the beginning of the academic year with Ph.D. output for the entire year.

Postdoctorals

Postdoctorals, or research associates as they are sometimes called, are essentially full-time researchers without academic rank and with no permanent status with the host institution.[15] A postdoctoral appointment allows the scholar to acquire new skills and experience in his chosen research field and enhances his qualification for a faculty position in a major university or a top research position in other sectors of the economy. Science departments depend upon these postdoctorals to carry on high quality research and bring new techniques to the laboratory that otherwise might not be available.

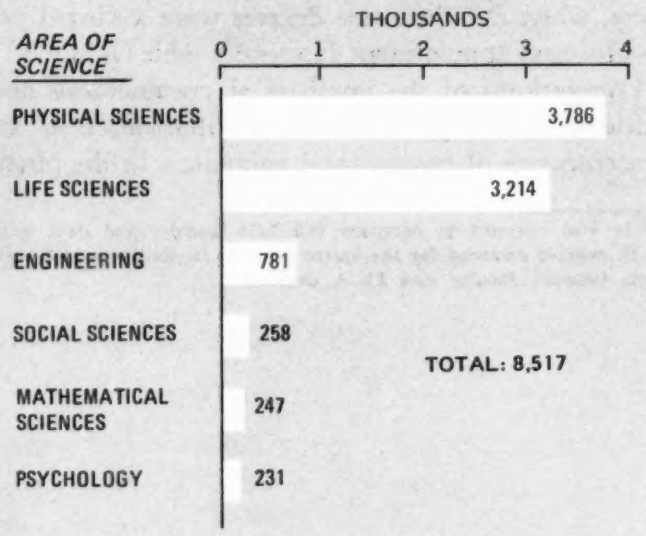
Number of postdoctorals. Postdoctoral appointments in doctorate departments totaled 8,517 in 1969, of whom more than four-fifths were in the physical sciences and the life sciences (chart 15). As might be expected, the number of postdoctorals was rather closely associated with the availability of research funds. For example, the area-of-science distribution of separately budgeted research expenditures totaling $2.1 billion in universities and colleges in academic year 1967–68 was as follows: Physical and life sciences combined, 69 percent; engineering, 13 percent; and social, mathematical, psychological, and other sciences combined, 18 percent.[16]

While graduate enrollment and faculty showed declining rates of increase in the period 1967–69, the increase in the number of postdoctorals in doctorate departments accelerated each year. The total number reported by the doctorate departments in this study increased 8.1 percent from 1967 to 1968 and 10.3 percent from 1968 to 1969 (table 14).

Relationship to enrollment, Ph.D. degrees, and faculty. Data on postdoctorals were compared with related educational variables, including graduate students, doctorate degrees granted, and graduate faculty. The social sciences attracted 21 percent of all graduate students but only 3 percent of the postdoctorals, with a student-to-postdoctoral ratio of 112.3 to 1, the highest of any major area of science. With 45 percent of the postdoctorals and 21 percent of the students in the physical sciences, this area exhibited the lowest student-to-postdoctoral ratio (8.0 to 1), followed by the life sciences with 8.6 to 1 (appendix table C–20).

In a detailed examination of the 41 fields of science in which postdoctorals were engaged in research, only two fields, chemistry (2,236) and physics (1,203), had more than 1,000 postdoctoral appointees. In contrast, fewer than 10 postdoctorals were reported in doctoral departments in the following fields: Sociology and anthropology combined, 2;[17] petroleum engineering, 4; mining engineering, 7; and agricultural economics, 9, as shown in appendix table C–19.

Chart 15. **Number of postdoctorals in doctorate departments, 1969**



SOURCE: NATIONAL SCIENCE FOUNDATION (APPENDIX TABLE C-19).

Table 14.—*Trends in the number of postdoctorals in doctorate departments, by area of science, 1967–69*[a]

Area of science	1967	1968	1969	Percent change	
				1967–68	1968–69
Total	7,140	7,720	8,517	8.1	10.3
Engineering	617	690	781	11.8	13.2
Physical sciences	3,407	3,615	3,786	6.1	4.7
Mathematical sciences	225	236	247	4.9	4.7
Life sciences	2,491	2,743	3,214	10.1	17.2
Psychology	170	214	231	25.9	7.9
Social sciences	230	222	258	−3.5	16.2

Source: Departmental Summaries from 2,894 doctorate departments, as shown in appendix E.

[15] For a comprehensive analysis of postdoctoral appointments in universities and colleges, government, industry, and independent nonprofit institutions, see National Academy of Sciences, *The Invisible University, Postdoctoral Education in the United States* (Washington, D.C.: National Academy of Sciences, 1969).

[16] National Science Foundation, *Resources for Scientific Activities at Universities and Colleges, 1969* (NSF 70–16) (Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office), table 17.

[17] This figure does not include the 54 postdoctorals in departments of sociology.

An almost one-to-one ratio existed in both the physical and life sciences in the number of doctorate degrees granted per postdoctoral in academic year 1968–69.[18] The highest ratio was in the social sciences, where 9.7 doctorate degrees were awarded per postdoctoral appointment (appendix table C–21).

Comparisons of the numbers of postdoctorals and graduate faculty provided another illustration of the concentration of postdoctoral appointees in the physical and life sciences. The physical sciences, with the largest number of postdoctorals, reported 2.5 faculty members per postdocatoral. The ratio was highest in the social sciences, with 30.0 faculty members per postdoctoral (appendix table C–22).

About two-thirds of the postdoctorals counted here received their doctorates in 1965, or later, and were termed "recent postdoctorals" for the purposes of this study. The highest proportion of recent postdoctorals among areas of science was in the physical sciences, 77 percent, while the lowest proportion was in the social sciences, 38 percent (appendix table C–19).

[18] It was relevant to compare fall 1968 postdoctoral data with Ph.D. degrees awarded for the entire year, as in similar correlations made between faculty and Ph.D. degrees.

APPENDIXES

A. Institutions Participating in the Graduate Traineeship Program, Fall 1969
B. Technical Notes
C. Statistical Tables
D. Instructions and Consolidated Departmental Data Sheets
E. Consolidated Departmental Summaries

APPENDIX A

Institutions Participating in Graduate Traineeship Program, Fall 1969[1]

Alabama	Auburn University
	University of Alabama
Alaska	University of Alaska
Arizona	Arizona State University
	University of Arizona
Arkansas	University of Arkansas, Fayetteville
California	California Institute of Technology
	Claremont Graduate School and University Center
	Loma Linda University
	Stanford University
	University of California, Berkeley
	University of California, Davis
	University of California, Irvine
	University of California, Los Angeles
	University of California, Riverside
	University of California, San Diego
	University of California, San Francisco
	University of California, Santa Barbara
	University of California, Santa Cruz
	University of the Pacific
	University of Santa Clara
	University of Southern California
	U.S. International University
Colorado	Colorado School of Mines
	Colorado State University
	University of Colorado
	University of Denver
Connecticut	University of Connecticut
	Wesleyan University
	Yale University
Delaware	University of Delaware
District of Columbia	American University
	Catholic University
	George Washington University
	Georgetown University
	Howard University
Florida	Florida State University
	Nova University
	University of Florida
	University of Miami
	University of South Florida
Georgia	Atlanta University
	Emory University
	Georgia Institute of Technology
	Georgia State College
	Medical College of Georgia
	University of Georgia
Hawaii	University of Hawaii
Idaho	University of Idaho
Illinois	DePaul University
	Illinois Institute of Technology
	Illinois State University
	Loyola University
	Northern Illinois University
	Northwestern University
	Southern Illinois University
	University of Chicago
	University of Illinois, Urbana
	University of Illinois Medical Center
	University of Illinois, Chicago Circle
Indiana	Indiana University
	Purdue University
	University of Notre Dame
Iowa	Iowa State University
	University of Iowa
Kansas	Kansas State University
	University of Kansas
Kentucky	University of Kentucky
	University of Louisville
Louisiana	Louisiana Polytechnic Institute
	Louisiana State University, Baton Rouge
	Louisiana State University, New Orleans
	Louisiana State University Medical Center, New Orleans

[1] The 224 science doctorate institutions listed here may differ from similar listings published elsewhere for the following principal reasons: (1) Differences in classifying branches, affiliates, or other organizational components of university systems; (2) variations in definitions of science and engineering fields; (3) differences in the time-period covered by the classification (e.g., single year or longer period); and (4) differences in classifications based on level of degree offered or level of degree granted, respectively, in a particular period.

Louisiana—Cont.	
	Loyola University
	Tulane University
Maine	University of Maine
Maryland	Johns Hopkins University
	University of Maryland
Massachusetts	Boston College
	Boston University
	Brandeis University
	Clark University
	Harvard University
	Lowell Technological Institute
	Massachusetts Institute of Technology
	Northeastern University
	Tufts University
	University of Massachusetts
	Worcester Polytechnic Institute
Michigan	Michigan State University, East Lansing
	Michigan Technological University
	University of Detroit
	University of Michigan
	Wayne State University
	Western Michigan University
Minnesota	University of Minnesota, Minneapolis
Mississippi	Mississippi State University
	University of Mississippi
	University of Southern Mississippi
Missouri	St. Louis University
	University of Missouri, Columbia
	University of Missouri, Kansas City
	University of Missouri, Rolla
	Washington University
Montana	Montana State University
	University of Montana
Nebraska	University of Nebraska
Nevada	University of Nevada
New Hampshire	Dartmouth College
	University of New Hampshire
New Jersey	Newark College of Engineering
	Princeton University
	Rutgers, The State University
	Seton Hall University
	Stevens Institute of Technology
New Mexico	New Mexico Institute of Mining and Technology
	New Mexico State University
	University of New Mexico
New York	Adelphi University
	Alfred University
	City University of New York
	Clarkson College of Technology
	Columbia University
	Cooper Union
	Cornell University
	Fordham University
	New School of Social Research
	New York Medical College
	New York University
	Polytechnic Institute of Brooklyn
	Rensselaer Polytechnic Institute
	Rockefeller University
	St. Bonaventure University
	St. Johns University
	State University of New York at Albany
	State University of New York at Binghamton
	State University of New York at Buffalo
	State University of New York, College of Forestry at Syracuse
	State University of New York, Downstate Medical Center
	State University of New York, Stony Brook
	State University of New York, Upstate Medical Center
	Syracuse University
	Union College and University
	University of Rochester
	Yeshiva University
North Carolina	Duke University
	University of North Carolina, Chapel Hill
	University of North Carolina—North Carolina State University, Raleigh
	Wake Forest University
North Dakota	North Dakota State University
	University of North Dakota
Ohio	Bowling Green State University
	Case-Western Reserve University
	Kent State University
	Miami University
	Ohio State University
	Ohio University
	University of Akron
	University of Cincinnati
	University of Dayton
	University of Toledo
Oklahoma	Oklahoma State University
	University of Oklahoma
Oregon	Oregon Graduate Center
	Oregon State University
	Portland State University
	University of Oregon
	University of Portland
Pennsylvania	Bryn Mawr College
	Carnegie-Mellon University
	Drexel Institute of Technology
	Duquesne University
	Hahnemann Medical College and Hospital
	Lehigh University
	The Medical College of Pennsylvania
	Pennsylvania State University
	Philadelphia College of Pharmacy and Science
	Temple University
	Thomas Jefferson University

Pennsylvania—Cont.	
	University of Pennsylvania
	University of Pittsburgh
	Villanova University
Rhode Island	Brown University
	Providence College
	University of Rhode Island
South Carolina	Clemson University
	Medical University of South Carolina
	University of South Carolina
South Dakota	South Dakota School of Mines and Technology
	South Dakota State University
	University of South Dakota
Tennessee	George Peabody College
	Memphis State University
	University of Tennessee, Knoxville
	University of Tennessee, Memphis
	Vanderbilt University
Texas	Baylor University, Waco
	Baylor College of Medicine, Houston
	North Texas State University
	Rice University
	Southern Methodist University
	Texas A&M University
	Texas Christian University
	Texas Tech University
	Texas Woman's University
	University of Houston
	University of Texas, Arlington
	University of Texas, Austin
Utah	Brigham Young University
	University of Utah
	Utah State University, Logan
Vermont	University of Vermont
Virginia	College of William and Mary
	University of Virginia
	Virginia Commonwealth University
	Virginia Polytechnic Institute
Washington	University of Washington
	Washington State University
West Virginia	West Virginia University
Wisconsin	Institute of Paper Chemistry (Lawrence University)
	Marquette University
	University of Wisconsin, Madison
	University of Wisconsin, Milwaukee
Wyoming	University of Wyoming

36

APPENDIX B

Technical Notes

Table		Page
B–1.	Doctorates awarded in the sciences and engineering by the 224 institutions covered in the study, compared with total science doctorates granted by all U.S. institutions of higher education, by area of science, academic years ended June 30, 1967–69	30
B–2.	Graduate student enrollment (full-time and part-time) in the sciences and engineering in 224 doctorate institutions covered in the study, compared with estimated U.S. enrollment for advanced degrees, by area of science and department degree level, 1969	30
B–3.	Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969	31

Definitions

Highest degree offered. The department was asked to state whether the master's or doctor's degree was the highest degree offered by the department at the time the statistics were supplied (October 1969). Institutions in which at least one department offered science doctorates were eligible for NSF traineeship grants. In such institutions, departments offering master's as their highest science degrees were also eligible. Statistics on which this report is based, however, relate only to science doctorate departments of eligible institutions that elected to apply for NSF Traineeships for 1970.

Degrees conferred. Degrees conferred during the previous 12-month period ending in June of the current year are reported. Degrees conferred jointly by two or more departments were recorded by one department only, at the discretion of the departments. The present report does not analyze the degree output of doctorate departments included in the study. However, statistics on this subject, by area of science, are summarized in the Consolidated Departmental Data Sheets (appendix D) and the Consolidated Departmental Summaries (appendix E).

Enrollment status of graduate students. A full-time graduate student is a *bona fide* graduate student (not a regular staff member; e.g., not an instructor) who is engaged entirely in training activities in his field of science; these activities may embrace any appropriate combination of study, teaching, and research. (Some institutions use the phrase, "geographical full-time student" to describe such students.) All other graduate students are considered parttime.

Level of study of graduate students. A first-year graduate student is one who in the fall of the year of application is entering graduate school for the first time, or has completed less than a normal year of graduate study. All graduate students who had completed a normal year of graduate study, or more, were classified as beyond-first-year graduate students.

Types and sources of major support. Information on graduate student support was requested for full-time students only. In cases of multiple support, the major source of support was requested. Major support is defined as a total stipend of $1,200 or more, exclusive of tuition and self-support during a particular academic year. A given student should be counted only once, and for each department the sum of full-

time graduate students enrolled should equal the sum of full-time graduate students listed by sources of major support. Four types of major support were indicated, without definitions, as follows: Fellowships and traineeships, teaching assistantships, research assistantships, and all other types of support. Separate data on number of graduate fellows and trainees, respectively, were not requested from institutions applying for NSF traineeships because of the problem of making meaningful distinctions between the two types of awards. The Federal Interagency Committee on Education (FICE) (as does NSF in its fellowship and traineeship programs) differentiates between the two categories of stipends, as follows: (1) A fellowship is "an award made directly to or on behalf of a student, selected in a national competition, to enable him to pursue post-baccalaureate training," and (2) a traineeship is "an educational award to a student selected by his university." Except for the student selection process, the terms and conditions of the two types of awards are generally identical, according to the Federal Interagency Committee on Education's Student Support Study Group, *Report on Federal Predoctoral Student Support, Part I, Fellowships and Traineeships*, April 1970, page 3. For purposes of analysis of major sources of support, four sources were used:[1] (1) U.S. Government; (2) institutional support (includes State and local government and "This" institution); (3) other outside sources; and (4) self-support, including loans and family support.

Citizenship of graduate students. Citizens of the United States or native residents of a possession of the United States are considered U.S. citizens. All others, including those who have applied for U.S. citizenship, are considered foreign.

Faculty. Faculty are staff of academic rank, instructor or above, who are significantly involved in the graduate academic program of the department (i.e., teaching one or more graduate courses or seminars and/or directing the research of one or more graduate students), including faculty on sabbatical leave who were expected to return. Visiting professors were excluded. Full-time faculty are those staff (including the departmental head) of academic rank, instructor or above, with a full-time appointment in that department and whose major responsibilities are in the academic programs of that department. Research professors (and research associates with academic rank) were included in the full-time faculty count and also separately counted as those who met the definition for full-time faculty but did not teach any regularly scheduled courses. Part-time faculty are those who met the faculty definition but have major responsibilities or activities outside the department (includes deans, affiliate or adjunct professors from other departments or outside the university, professors emeriti, experiment laboratory or extension service staff, museum staff, etc.). Any one faculty member was counted as full-time in only one department.

Postdoctorals and research associates. All individuals who devote essentially full-time effort to research activities within that department, whose appointment is nonpermanent, not of academic rank (instructor or above), and usually for a specific time period, are postdoctorals or research associates. Such individuals usually have an earned doctorate (or the equivalent in experience) and may contribute to the academic program through seminars, lectures, or working with graduate students, but their postdoctoral activities are considered to have an element of additional training for them.

Statistical Coverage of Graduate Science Education

Statistics on graduate enrollment, faculty, and postdoctorals in the sciences and engineering submitted by the 224 doctorate institutions that applied for 1970 NSF traineeship grants, upon which this report is based, represent nearly the complete universe for doctorate-granting departments. As mentioned elsewhere in the report, the graduate educational characteristics of master's departments of the 224 institutions were not included for two principal reasons: (1) They constitute only a small fraction of the educational activities of doctorate-granting institutions, and (2) the data for these master's departments could not be considered representative of similar departments of the approximately 200 institutions granting master's degrees in the sciences and engineering that were not covered in this study, since they were not eligible for NSF traineeship grants.

The 2,894 doctorate departments of these 224 institutions awarded well over 90 percent of the doctorate degrees awarded by all U.S. institutions of higher education in each of the 3 academic years ended June 30, 1967–69 (appendix table B–1). Coverage in terms of proportion of doctorates awarded was quite consistent in each area of science throughout the 3-year period. It was weakest in the life sciences, in which slightly more than three-fourths of the doctorates were awarded by institutions in the study. In this regard, it

[1] See appendixes D and E for the application forms used for NSF Traineeships and instructions used to complete the Departmental Data Sheet (NSF Form 345).

should be noted that many departments granting doctorates in the basic-medical and clinical-medical sciences do not apply for NSF traineeships. In the social sciences and engineering for each of the 3 years, and in mathematical sciences for 1969 only, the indicated doctorate output of institutions in the study was higher than that shown for each of the areas of science by U.S. Office of Education statistics. This apparent discrepancy may be attributed to the differences in the classifications of scientific fields used by NSF and OE, respectively.

Enrollment statistics provide another measure of the coverage of graduate science education characterizing the present study. The 224 doctorate institutions in this study enrolled 196,341 graduate students, or 81 percent of total U.S. enrollment for advanced degrees in all institutions in 1969. Doctorate departments of the 224 institutions accounted for 76 percent of the U.S. total, and their master's departments accounted for an additional 5 percent (appendix table B–2).[2] Among areas of science, coverage of graduate enrollment in doctorate departments ranged from a high of 88 percent in the social sciences to a low of 53 percent in the mathematical sciences. As mentioned earlier, the foregoing area-of-science comparisons do not include enrollment in master's departments of the 224 institutions in the study and of other institutions outside the scope of the traineeship program. It should also be noted that some differences in the foregoing comparisons of enrollment data may be due to differences in institutional reporting of such information to the U.S. Office of Education and to the National Science Foundation, respectively, as well as differences in definitions of scientific fields used by the two agencies.

The classification of departments, by area and field of science, used in the present study is shown in appendix table B–3. In addition to providing details regarding the system used to classify the data on graduate science education contained in this report, the listing of titles used by the 2,894 doctorate departments and the 460 master's departments provides useful information on the organizational structure of U.S. higher education in the sciences and engineering.

[2] As noted elsewhere, statistics on the characteristics of master's departments of the doctorate institutions are not presented in this report.

Table B–1.—*Doctorates awarded in the sciences and engineering by the 224 institutions covered in the study, compared with total science doctorates granted by all U.S. institutions of higher education, by area of science, academic years ended June 30, 1967–69*

Area of science and academic year	U.S. total, all institutions [a]	Institutions covered in study		Area of science and academic year	U.S. total, all institutions [a]	Institutions covered in study	
		Doctorates awarded	Percent of total			Doctorates awarded	Percent of total
Total:				**Life sciences:**			
1967	12,981	12,121	93.4	1967	3,116	2,442	78.4
1968	14,420	13,364	92.7	1968	3,681	2,802	76.1
1969	15,982	14,998	93.8	1969	4,116	3,154	76.6
Engineering:				**Psychology:**			
1967	2,581	2,731	105.8	1967	1,293	1,058	81.8
1968	2,833	3,003	106.0	1968	1,452	1,186	81.7
1969	3,234	3,514	108.7	1969	1,728	1,398	80.9
Physical sciences:				**Social sciences:**			
1967	3,478	3,327	95.7	1967	1,685	1,755	104.2
1968	3,642	3,495	96.0	1968	1,842	1,929	104.7
1969	3,901	3,704	95.0	1969	1,940	2,157	111.2
Mathematical sciences:							
1967	828	808	97.6				
1968	970	949	97.8				
1969	1,063	1,071	100.8				

[a] Based on U.S. Office of Education statistics on earned degrees granted by U.S. institutions of higher education.

Table B–2.—*Graduate student enrollment (full-time and part-time) in the sciences and engineering in 224 doctorate institutions covered in the study, compared with estimated U.S. enrollment for advanced degrees, by area of science and department degree level, 1969*

Area of science	Estimated U.S. total enrollments for advanced degrees, fall 1969 [a]	Graduate students enrolled in 224 doctorate institutions covered in study, 1969					
		All departments		Doctorate departments		Master's departments	
		Number	Percent of total	Number	Percent of total	Number	Percent of total
Total	243,715	196,341	80.6	184,845	75.8	11,496	4.7
Engineering	65,048	55,537	85.4	52,567	80.8	2,970	4.6
Physical sciences	39,885	35,642	89.4	34,696	87.0	946	2.4
Mathematical sciences	29,175	17,383	59.6	15,417	52.8	1,966	6.7
Life sciences	44,203	32,129	72.7	30,810	69.7	1,319	3.0
Psychology	22,726	14,487	63.7	13,763	60.6	724	3.2
Social sciences	42,678	41,163	96.5	37,592	88.1	3,571	8.4

[a] Based on preliminary data of the U.S. Office of Education, fall 1969.

Table B–3.—*Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969* [a]

Field of science and departmental title	Total	Doctorate	Master's
Total	3,354	2,894	460
Engineering	765	665	100
Aeronautical, total	33	33	
Aeronautical and astronautical engineering	3	3	
Aeronautics	1	1	
Aeronautics and astronautics	6	6	
Aeronautics and engineering mechanics	1	1	
Aerospace engineering	16	16	
Aerospace engineering and engineering physics	2	2	
Astronautics	1	1	
Space science	3	3	
Agricultural, total	32	24	8
Agricultural and irrigation engineering	1	1	
Agricultural engineering	28	21	7
Chemical and paper engineering	1		1
Wood technology	1	1	
Wood products engineering	1	1	
Chemical, total	101	91	10
Chemical engineering	91	83	8
Chemical engineering and materials science	2	2	
Chemical and metallurgical engineering	5	4	1
Chemical and nuclear engineering	2	2	
Plastics	1		1
Civil, total	104	88	16
Civil engineering	89	74	15
Civil engineering hydraulics	1	1	
Civil engineering and engineering mechanics	3	3	
Civil and environmental engineering	5	4	1
Civil and geological engineering	2	2	
Environmental engineering	2	2	
Environmental sciences and engineering	2	2	
Electrical, total	125	108	17
Electrical computer science	2	1	1
Electrical engineering	120	106	14
Electronic engineering	2		2
Electronics	1	1	
Engineering science, total	50	45	5
Applied mechanics	6	5	1
Applied science	1	1	
Engineering acoustics	1	1	
Engineering mechanics	20	18	2
Engineering science	10	8	2
Engineering and applied physics	1	1	
Mechanical science	2	2	
Mechanics	6	6	
Mechanics and hydraulics	1	1	
Theoretical and applied mechanics	2	2	
Industrial, total	59	47	12
Administrative science	1	1	
Applied analysis	1	1	
Industrial communication engineering	1	1	
Industrial engineering	28	21	7
Industrial engineering and management science	4	3	1
Industrial engineering and operations research	7	5	2
Information engineering	1		1
Management	1	1	
Management engineering	1	1	
Management science	2	2	
Operations research	4	4	
Organization behavior	1	1	
Systems engineering	7	6	1
Mechanical, total	120	102	18
Aerospace and mechanical engineering	22	22	
Marine engineering and naval architecture	1	1	
Mechanical engineering	92	75	17
Mechanical and industrial engineering	1	1	
Naval architecture	2	2	
Structural engineering	1		1
Transportation	1	1	
Metallurgical, total	53	51	2
Ceramic engineering	5	4	1
Ceramics	2	2	
Material science	8	8	
Materials engineering	10	10	
Metallurgical engineering	7	7	
Metallurgical and materials engineering	10	10	
Metallurgy	10	9	1
Solid state science and technology	1	1	
Mining, total	14	9	5
Mineral engineering	3	1	2

[a] Although the present report covers only the 2,894 doctorate departments, information on the 460 master's departments is also included in the table.

Table B–3.—*Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969[a]*—continued

Field of science and departmental title	Total	Doctorate	Master's
Mining	1	1	
Mining engineering	5	3	2
Mining and geological engineering	3	3	
Mining and metallurgy	2	1	1
Nuclear, total	31	29	2
Nuclear engineering	26	24	2
Nuclear science and engineering	4	4	
Nuclear studies	1	1	
Petroleum, total	8	8	
Petroleum engineering	4	4	
Petroleum and chemical engineering	4	4	
Other engineering, total	35	30	5
Applied physics	3	3	
Bioengineering	3	3	
Biomedical engineering	7	7	
Economics of engineering	1	1	
Energy engineering	2	2	
Engineering	11	11	
Engineering design	2		2
Engineering mathematics	1	1	
Engineering physics and physics	1	1	
Polymer science and engineering	1	1	
Technology	1		1
Textile engineering	2		2
Physical sciences	583	509	74
Astronomy, total	23	22	1
Atmospheric sciences, total	20	20	
Aeronautics and planet atmospheres	1	1	
Astrogeophysics	1	1	
Astrophysics	1	1	
Atmospheric sciences	5	5	
Atmospheric and space sciences	1	1	
Meteorology	9	9	
Meteorology and oceanography	2	2	
Chemistry, total	199	182	17
Chemistry	193	177	16
Chemistry and physics	1		1
Crystallography	1	1	
Paper technology	1	1	
Polymer science	3	3	
Geosciences, total	133	100	33
Earth and planetary science	4	4	
Earth sciences	6	5	1
Geodetic science	1	1	
Geochemistry	1	1	
Geochronology	1	1	
Geological science	18	14	4
Geology	69	46	23
Geology and geography	6	4	2
Geology and geological engineering	3	3	
Geology and geophysics	7	7	
Geophysical instruction	1		1
Geophysics	6	5	1
Geophysics and planetary physics	1	1	
Geosciences	5	4	1
Hydrology	1	1	
Mineralogy	1	1	
Paleontology	1	1	
Sedimentary structure	1	1	
Oceanography, total	23	20	3
Marine biology	2	1	1
Marine science	5	5	
Ocean engineering	4	2	2
Oceanography	11	11	
Water chemistry	1	1	
Physics, total	185	165	20
Astronomy and space science	1	1	
Chemical physics	3	3	
Electrophysics	1	1	
Mathematical physics	1	1	
Molecular physics	1	1	
Optics	1	1	
Physics	161	141	20
Physics and astronomy	14	14	
Physics and astrophysics	1	1	
Plasma physics	1	1	
Mathematical sciences	253	203	50
Applied mathematics, total	37	27	10
Applied mathematics	6	6	
Applied mathematics and computer science	2	2	
Computer science	29	19	10
Mathematics, total	175	139	36

Table B–3.—*Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969[a]*—continued

Field of science and departmental title	Total	Doctorate	Master's
Mathematical science	2	2	
Mathematics	169	133	36
Mathematics and statistics	4	4	
Statistics, total	41	37	4
Biostatistics	3	1	2
Experimental statistics	1	1	
Mathematical biology	2	2	
Mathematical statistics	1	1	
Statistics	32	30	2
Statistics and computer science	2	2	
Life sciences	949	874	75
Agricultural, total	225	198	27
Agricultural chemistry	4	4	
Agronomy	22	20	2
Agronomy and genetics	2	2	
Animal husbandry	3	2	1
Animal industry	1	1	
Animal nutrition	1	1	
Animal science	30	25	5
Conservation	1	1	
Crop and soil science	1	1	
Dairy science	5	2	3
Entomology	30	27	3
Entomology and parasitology	2	2	
Farm crops	1	1	
Floriculture	1	1	
Food science	9	7	2
Food science and technology	6	6	
Food technology	1	1	
Food and nutrition	8	5	3
Forest chemistry	1	1	
Forest economics	1	1	
Forest management	2	2	
Forest resources	4	3	1
Forestry	15	13	2
Forestry and horticulture	1	1	
Home economics	1	1	
Horticulture	16	16	
Nutrition	10	9	1
Parasitology	1	1	
Plant breeding	2	2	
Plant science	6	6	
Plant and soil science	4	3	1
Poultry	1	1	
Poultry science	9	7	2
Range science	2	2	
Recreation parks	1	1	
Resource development	1	1	
Silviculture	1	1	
Soil science	3	3	
Soil and water science	1		1
Soils	4	4	
Soils and meteorology	1	1	
Vegetable crops	2	2	
Water resources	1	1	
Watershed management	3	3	
Wildlife	2	2	
Wildlife management	1	1	
Biochemistry, total	120	119	1
Agricultural biochemistry	2	2	
Biochemical science	1	1	
Biochemistry	79	78	1
Biochemistry and biophysics	6	6	
Biochemistry and nutrition	2	2	
Biological chemistry	3	3	
Biophysics	12	12	
Biophysics and microbiology	2	2	
Biophysics and physical biochemistry	1	1	
Medical biochemistry	2	2	
Medical physics	1	1	
Molecular biophysics	1	1	
Molecular biophysics and biochemistry	1	1	
Plant nutrition	1	1	
Radiation biology	4	4	
Radiation biology and biophysics	1	1	
Radiation biophysics	1	1	
Biology, total	140	116	24
Biological science	27	21	6
Biological structure	1	1	
Biology	93	75	18
Biomedical science	3	3	
Cellular biology	5	5	
Experimental biology	1	1	
Molecular basis of biological phenomena	1	1	
Molecular biology	7	7	
Organismic biology	1	1	
Population and environmental biology	1	1	
Botany, total	79	74	5
Botanical science	1	1	
Botany	38	37	1
Botany and microbiology	7	6	1
Botany and plant pathology	10	9	1
Plant pathology	20	18	2
Plant physiology	3	3	

Table B–3.—*Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969[a]*—continued

Field of science and departmental title	Total	Doctorate	Master's
Microbiology, total	81	79	2
Bacteriology	8	7	1
Cell physiology	1	1	
Medical microbiology	6	6	
Microbiology	65	64	1
Virology	1	1	
Pharmacology, total	74	72	2
Biochemical pharmacology	1	1	
Biopharmaceutical sciences	1	1	
Chemistry and pharmaceutical chemistry	1	1	
Medicinal chemistry	3	3	
Pharmaceutical chemistry	10	10	
Pharmacognosy	1	1	
Pharmacology	42	41	1
Pharmacology and toxicology	1	1	
Pharmacy	14	13	1
Physiology, total	65	65	
Animal physiology	2	2	
Medical physiology	3	3	
Physiological chemistry	1	1	
Physiological optics	2	2	
Physiology	37	37	
Physiology and anatomy	2	2	
Physiology and biophysics	13	13	
Physiology and pharmacology	5	5	
Zoology, total	58	54	4
Fish and wildlife	3	3	
Fisheries	1	1	
Forest zoology	1	1	
Zoology	45	42	3
Zoology and entomology	5	5	
Zoology and physiology	3	2	1
Other life sciences, total	107	97	10
Administration medicine	1	1	
Anatomy	38	37	1
Animal genetics	1	1	
Arts and sciences	1	1	
Audiology	1		1
Bacteriology and public health	1	1	
Biometrics	2	2	
Dentistry			
Ecology	5	5	
Embryology	1		1
Endocrinology	1	1	
General science	2	2	
Genetics	14	14	
Health science	1	1	
Health and physical education	2	2	
History of medicine	1		1
Immunology	2	2	
Life sciences	3	3	
Medical sciences	1	1	
Natural resources	2	2	
Neurobiology	2	2	
Occupational health	1		1
Pathology	11	10	1
Planetary and space science	1	1	
Preventive medicine and public health	2	1	1
Psychobiology	1	1	
Radiology	2	1	1
Science	1	1	
Science education	1	1	
Toxicology	1	1	
Tropical medicine	1	1	
Veterinary medicine	1		1
Veterinary science	2	1	1
Psychology	160	141	19
Psychology, total	160	141	19
Animal behavior	1	1	
Child development	3	3	
Educational psychology	1	1	
Experimental social psychology	1	1	
Human development	2	2	
Psychiatry and neurology	1	1	
Psychology	150	132	18
Social psychology	1		1
Social sciences	644	502	142
Agricultural economics, total	21	16	5
Agricultural economics	13	11	2
Agricultural economics and economics	2	1	1
Agricultural economics and sociology	6	4	2
Anthropology, total	67	56	11
Economics, total	126	104	22
Business economics	1	1	
Economics	118	96	22
Economics and business administration	2	2	
Industrial relations	2	2	
Mineral economics	1	1	
Political economy	2	2	

Table B–3.—*Number of science departments in the 224 doctorate institutions covered in the study, by area and field of science and department degree level, 1969[a]*—continued

Field of science and departmental title	Total	Doctorate	Master's
Geography, total	59	44	15
Geography	58	43	15
Geography and anthropology	1	1	----
History and philosophy of science, total	36	34	2
History	1	1	----
History and philosophy of science	5	5	----
History of science	10	9	1
Logic and methodology of science	1	1	----
Philosophy	15	14	1
Philosophy of science	4	4	----
Linguistics, total	65	54	11
Communication	2	2	----
Communications	3	3	----
English	1	----	1
Information science	5	3	2
Interpersonal communication	1	1	----
Journalism	1	1	----
Linguistics	38	32	6
Mass communications	1	1	----
Psycholinguistics	2	2	----
Sensory communication	1	1	----
Speech	6	5	1
Speech and pathology	4	3	1
Political science, total	125	97	28
Government	17	12	5
Government and foreign affairs	1	1	----
International relations	2	2	----
International studies	3	3	----
Political science	92	72	20
Politics	4	4	----
Public administration	3	2	1
Public affairs	3	1	2
Sociology, total	113	85	28
Area studies	1	----	1
City planning	1	1	----
Demography	1	1	----
Folklore	1	1	----
Interdisciplinary studies	1	1	----
Labor and industrial relations	1	1	----
Leadership and human behavior	1	1	----
Regional science	1	1	----
Rural sociology	2	2	----
Social relations	2	2	----
Social sciences	2	1	1
Sociology	93	70	23
Urban planning	6	3	3
Sociology and anthropology, total	32	12	20

APPENDIX C

Statistical Tables

TABLE		Page
C–1.	Graduate students in doctorate departments, by area of science and enrollment status, 1967–69	39
C–2.	Graduate students in doctorate departments, by field of science and enrollment status, 1969	40
C–3.	Graduate students in doctorate departments, by field of science and citizenship, 1969	41
C–4.	Graduate students in doctorate departments, by field of science, citizenship, and enrollment status, 1969	42
C–5.	Graduate students in doctorate departments, by field of science and level of study, 1969	43
C–6.	Graduate students in doctorate departments, by field of science, level of study, and enrollment status, 1969	44
C–7.	Full-time graduate students in doctorate departments, by field of science and type of support, 1969	45
C–8.	Full-time graduate students in doctorate departments, by type of support, level of study, and citizenship, 1969	46
C–9a.	Full-time graduate students in doctorate departments, by area of science, type of support, and level of study, 1969	46
C–9b.	Percent distributions of full-time graduate students in doctorate departments, by area of science, type of support, and level of study, 1969	47
C–10a.	Full-time graduate students in doctorate departments, by source of support and area of science, 1969	48
C–10b.	Percent distributions of full-time graduate students in doctorate departments, by source of support and area of science, 1969	49
C–11a.	Full-time graduate students in doctorate departments, by source and type of support, 1969	50
C–11b.	Percent distributions of full-time graduate students in doctorate departments, by source and type of support, 1969	51
C–12.	Full-time graduate students in doctorate departments supported by U.S. Government sources, by Federal agency and citizenship, 1969	51
C–13a.	Full-time graduate students in doctorate departments supported by U.S. Government sources, by field of science and Federal agency, 1969	52
C–13b.	Percent distribution of full-time graduate students in doctorate departments supported by U.S. Government sources, by field of science, 1969	53
C–13c.	Percent distribution of full-time graduate students in doctorate departments supported by U.S. Government sources, by Federal agency, 1969	54
C–14.	Full-time graduate students in doctorate departments supported by other U.S. sources, by field of science, 1969	55
C–15a.	Total full-time graduate students in 2,938 science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	56
C–15b.	Full-time graduate students in 566 engineering doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	57
C–15c.	Full-time graduate students in 452 physical science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	58
C–15d.	Full-time graduate students in 176 mathematics doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	59
C–15e.	Full-time graduate students in 619 life science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	60

Table		Page
C–15f.	Full-time graduate students in 128 psychology doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	61
C–15g.	Full-time graduate students in 397 social science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69	62
C–16.	Full-time faculty in doctorate departments, by field of science, 1969	63
C–17.	Full-time graduate students in doctorate departments, compared with full-time graduate faculty, by area of science, 1969	63
C–18.	Full-time graduate faculty in doctorate departments, 1968, compared with number of Ph.D. degrees granted, academic year 1968–69, by area of science	64
C–19.	Postdoctorals in doctorate departments, by field of science, 1969	64
C–20.	Full-time graduate students in doctorate departments, compared with postdoctorals, by area of science, 1969	65
C–21.	Postdoctorals in doctorate departments, 1968, compared with number of Ph.D. degrees granted, academic year 1968–69, by area of science	65
C–22.	Full-time graduate faculty in doctorate departments, compared with number of postdoctorals, by area of science, 1969	65

Table C–1.—*Graduate students in doctorate departments, by area of science and enrollment status, 1967–69*

Area of science	Total	Full time		Part time	
		Number	Percent of total	Number	Percent of total
	1967				
Total	173,459	133,200	76.8	40,259	23.2
Engineering	51,034	29,946	58.7	21,088	41.3
Physical sciences	34,556	30,295	87.7	4,261	12.3
Mathematical sciences	14,934	11,346	76.0	3,588	24.0
Life sciences	28,164	25,456	90.4	2,708	9.6
Psychology	11,858	10,491	88.5	1,367	11.5
Social sciences	32,913	25,666	78.0	7,247	22.0
	1968				
Total	179,888	138,283	76.9	41,605	23.1
Engineering	51,565	30,366	58.9	21,199	41.1
Physical sciences	35,126	30,916	88.0	4,210	12.0
Mathematical sciences	15,346	11,700	76.2	3,646	23.8
Life sciences	29,656	26,597	89.7	3,059	10.3
Psychology	12,868	11,317	87.9	1,551	12.5
Social sciences	35,317	27,387	77.5	7,930	22.1
	1969				
Total	184,845	141,199	76.4	43,646	23.6
Engineering	52,167	30,420	58.6	21,747	41.4
Physical sciences	34,696	30,175	87.0	4,521	13.0
Mathematical sciences	15,417	11,727	76.1	3,690	23.9
Life sciences	30,310	27,088	89.5	3,222	10.5
Psychology	13,763	11,918	86.6	1,845	13.4
Social sciences	37,192	28,971	77.1	8,421	22.9

Table C–2.—*Graduate students in doctorate departments, by field of science and enrollment status, 1969*

Area and field of science	Total		Full time		Part time	
	Number	Percent distribution	Number	Percent of total	Number	Percent of total
Total	184,845	100.0	141,199	76.4	43,646	23.6
Engineering	52,567	28.4	30,820	58.6	21,747	41.4
Aeronautical	2,162	1.2	1,504	69.6	658	30.4
Agricultural	533	.3	433	81.2	100	18.8
Chemical	4,819	2.6	3,204	66.5	1,615	33.5
Civil	6,546	3.5	4,543	69.4	2,003	30.6
Electrical	16,162	8.7	7,518	46.5	8,644	53.5
Engineering science	1,792	1.0	1,207	67.4	585	32.6
Industrial	5,017	2.7	2,405	47.9	2,612	52.1
Mechanical	8,326	4.5	4,547	54.6	3,779	45.4
Metallurgical and materials	2,411	1.3	1,802	74.7	609	25.3
Mining	334	.2	299	89.5	35	10.5
Nuclear	1,307	.7	1,002	76.7	305	23.3
Petroleum	331	.2	192	58.0	139	42.0
Other engineering	2,827	1.5	2,164	76.5	663	23.5
Physical sciences	34,696	18.8	30,175	87.0	4,521	13.0
Astronomy	531	.3	512	96.4	19	3.6
Atmospheric sciences	815	.4	739	90.7	76	9.3
Chemistry	15,813	8.6	13,634	86.2	2,179	13.8
Geosciences	3,625	2.0	3,297	91.0	328	9.0
Oceanography	1,108	.6	984	88.8	124	11.2
Physics	12,804	6.9	11,009	86.0	1,795	14.0
Mathematical sciences	15,417	8.3	11,727	76.1	3,690	23.9
Applied mathematics	1,804	1.0	1,447	80.2	357	19.8
Mathematics	12,123	6.6	9,091	75.0	3,032	25.0
Statistics	1,490	.8	1,189	79.8	301	20.2
Life sciences	30,810	16.7	27,588	89.5	3,222	10.5
Agriculture	6,856	3.7	5,963	87.0	893	13.0
Biochemistry	3,481	1.9	3,256	93.5	225	6.5
Biology	7,197	3.9	6,282	87.3	915	12.7
Botany	2,588	1.4	2,316	89.5	272	10.5
Microbiology	1,998	1.1	1,838	92.0	160	8.0
Pharmacology	1,304	.7	1,195	91.6	109	8.4
Physiology	1,337	.7	1,250	93.5	87	6.5
Zoology	3,902	2.1	3,659	93.8	243	6.2
Other life sciences	2,147	1.2	1,829	85.2	318	14.8
Psychology	13,763	7.4	11,918	86.6	1,845	13.4
Social sciences	37,592	20.3	28,971	77.1	8,621	22.9
Agricultural economics	893	.5	785	87.9	108	12.1
Anthropology	3,511	1.9	3,116	88.7	395	11.3
Economics (except agricultural)	8,854	4.8	6,891	77.9	1,963	22.1
Geography	1,997	1.1	1,709	85.6	288	14.4
History and philosophy of science	786	.4	688	89.8	78	10.2
Linguistics	2,845	1.5	2,191	77.0	654	23.0
Political science	10,548	5.7	7,503	71.1	3,045	28.9
Sociology	6,496	3.5	5,008	77.8	1,438	22.2
Sociology and anthropology	1,904	.7	732	56.1	572	43.9

Table C–3.—*Graduate students in doctorate departments, by field of science and citizenship, 1969*

Area and field of science	Total	U.S. citizens		Foreign students	
		Number	Percent of total	Number	Percent of total
Total	184,845	153,306	82.9	31,539	17.1
Engineering	52,567	39,486	75.1	13,081	24.9
Aeronautical	2,162	1,715	79.3	447	20.7
Agricultural	533	326	61.2	207	38.8
Chemical	4,819	3,248	67.4	1,571	32.6
Civil	6,546	4,300	65.7	2,246	34.3
Electrical	16,162	13,116	81.2	3,046	18.8
Engineering science	1,792	1,263	70.5	529	29.5
Industrial	5,017	3,962	79.0	1,055	21.0
Mechanical	8,326	6,356	76.3	1,970	23.7
Metallurgical and materials	2,411	1,642	68.1	769	31.9
Mining	334	152	45.5	182	54.5
Nuclear	1,307	1,059	81.0	248	19.0
Petroleum	331	224	67.7	107	32.3
Other engineering	2,827	2,123	75.1	704	24.9
Physical sciences	34,696	28,678	82.7	6,018	17.3
Astronomy	531	464	87.4	67	12.6
Atmospheric sciences	815	694	85.2	121	14.8
Chemistry	15,813	13,072	82.7	2,741	17.3
Geosciences	3,625	3,080	85.0	545	15.0
Oceanography	1,108	1,018	91.9	90	8.1
Physics	12,804	10,350	80.8	2,454	19.2
Mathematical sciences	15,417	13,109	85.0	2,308	15.0
Applied mathematics	1,804	1,511	83.8	293	16.2
Mathematics	12,123	10,584	87.3	1,539	12.7
Statistics	1,490	1,014	68.1	476	31.9
Life sciences	30,810	26,339	85.5	4,471	14.5
Agriculture	6,856	5,131	74.8	1,725	25.2
Biochemistry	3,481	2,925	84.0	556	16.0
Biology	7,197	6,561	91.2	636	8.8
Botany	2,588	2,138	82.6	450	17.4
Microbiology	1,998	1,774	88.8	224	11.2
Pharmacology	1,304	996	76.4	308	23.6
Physiology	1,337	1,222	91.4	115	8.6
Zoology	3,902	3,649	93.5	253	6.5
Other life sciences	2,147	1,943	90.5	204	9.5
Psychology	13,763	13,202	95.9	561	4.1
Social sciences	37,592	32,492	86.4	5,100	13.6
Agricultural economics	893	942	11.9	251	28.1
Anthropology	3,511	3,324	94.7	187	5.3
Economics (except agricultural)	8,834	6,799	77.0	2,035	23.0
Geography	1,987	1,682	84.7	305	15.3
History and philosophy of science	786	684	91.1	68	8.9
Linguistics	2,945	2,422	85.1	423	14.9
Political science	10,548	9,609	91.1	959	8.9
Sociology	6,886	6,139	89.9	783	11.1
Sociology and anthropology	1,804	1,174	90.9	130	10.0

Table C–4.—*Graduate students in doctorate departments, by field of science, citizenship, and enrollment status, 1969*

Area and field of science	Full time					Part time				
	Total	U.S. citizens		Foreign students		Total	U.S. citizens		Foreign students	
		Number	Percent of total	Number	Percent of total		Number	Percent of total	Number	Percent of total
Total	141,199	113,167	80.1	28,032	19.9	43,646	40,139	92.0	3,507	8.0
Engineering	30,820	19,904	64.6	10,916	35.4	21,747	19,582	90.0	2,165	10.0
Aeronautical	1,504	1,130	75.1	374	24.9	658	585	88.9	73	11.1
Agricultural	433	240	55.4	193	44.6	100	86	86.0	14	14.0
Chemical	3,204	1,820	56.8	1,384	43.2	1,615	1,428	88.4	187	11.6
Civil	4,543	2,624	57.8	1,919	42.2	2,003	1,676	83.7	327	16.3
Electrical	7,578	5,181	68.9	2,337	31.1	8,644	7,935	91.8	709	8.2
Engineering science	1,207	741	61.4	466	38.6	585	522	89.2	63	10.8
Industrial	2,405	1,614	67.1	791	32.9	2,612	2,348	89.9	264	10.1
Mechanical	4,547	2,938	64.6	1,609	35.4	3,779	3,418	90.4	361	9.6
Metallurgical and materials	1,802	1,071	59.4	731	40.6	609	571	93.8	38	6.2
Mining	299	130	43.5	169	56.5	35	42	62.9	13	37.1
Nuclear	1,002	771	76.9	231	23.1	305	288	94.4	17	5.6
Petroleum	192	90	46.9	102	53.1	139	134	96.4	5	3.6
Other engineering	2,164	1,554	71.8	610	28.2	663	569	85.8	94	14.2
Physical sciences	30,175	24,446	81.0	5,729	19.0	4,521	4,232	93.6	289	6.4
Astronomy	512	446	87.1	66	12.9	19	18	94.7	1	5.3
Atmospheric sciences	739	620	83.9	119	16.1	76	74	97.4	2	2.6
Chemistry	13,634	11,082	81.3	2,552	18.7	2,179	1,990	91.3	189	8.7
Geosciences	3,297	2,764	83.8	533	16.2	328	316	96.3	12	3.7
Oceanography	984	904	91.9	80	8.1	124	114	91.9	10	8.1
Physics	11,009	8,630	78.4	2,379	21.6	1,795	1,720	95.8	75	4.2
Mathematical sciences	11,727	9,593	81.8	2,134	18.2	3,690	3,516	95.3	174	4.7
Applied mathematics	1,447	1,196	82.0	261	18.0	357	325	91.0	32	9.0
Mathematics	9,091	7,667	84.3	1,424	15.7	3,022	2,917	96.2	115	3.8
Statistics	1,189	769	62.2	449	37.8	301	274	91.0	27	9.0
Life sciences	27,588	23,326	84.6	4,262	15.4	3,222	3,013	93.5	209	6.5
Agriculture	5,963	4,306	72.2	1,657	27.8	893	825	92.4	68	7.6
Biochemistry	3,256	2,715	83.4	541	16.6	224	210	93.3	15	6.7
Biology	6,292	5,702	90.6	590	9.4	915	859	93.9	56	6.1
Botany	2,316	1,890	81.6	426	18.4	272	248	91.2	24	8.8
Microbiology	1,628	1,422	88.2	216	11.8	140	132	95.0	8	5.0
Pharmacology	1,195	897	75.1	298	24.9	109	99	90.8	10	9.2
Physiology	1,250	1,139	91.1	111	8.9	87	83	95.4	4	4.6
Zoology	3,439	3,415	93.3	244	6.7	243	234	96.3	9	3.7
Other life sciences	1,629	1,440	99.7	189	10.3	318	303	95.3	15	4.7
Psychology	11,918	11,494	95.7	514	4.3	1,945	1,798	97.5	47	2.5
Social sciences	28,971	24,494	84.5	4,477	15.5	3,631	7,994	92.8	637	7.2
Agricultural economics	795	549	69.0	256	36.1	109	93	85.1	15	13.9
Anthropology	3,114	2,934	94.2	182	5.8	281	280	99.7	1	1.3
Economics (except agricultural)	6,981	5,126	74.5	1,755	25.5	1,958	1,678	85.7	280	14.3
Geography	1,709	1,414	82.7	295	17.3	299	279	96.5	10	3.5
History and philosophy of science	699	621	80.9	67	9.7	78	77	98.7	1	1.3
Linguistics	2,191	1,910	82.6	281	17.4	634	612	96.6	42	6.4
Political science	7,508	6,756	89.9	752	10.2	2,043	2,074	94.4	169	5.6
Sociology	3,966	4,670	87.6	666	15.9	1,230	1,203	95.8	6	0.4
Sociology and anthropology	708	696	96.9	94	13.1	670	630	94.1	94	5.9

Table C–5.—*Graduate students in doctorate departments, by field of science and level of study, 1969*

Area and field of science	Total	First year		Beyond first year	
		Number	Percent of total	Number	Percent of total
Total	184,845	64,654	35.0	120,191	65.0
Engineering	52,567	22,757	43.3	29,810	56.7
Aeronautical	2,162	779	36.0	1,383	64.0
Agricultural	533	149	28.0	384	72.0
Chemical	4,819	1,851	38.4	2,968	61.6
Civil	6,546	3,055	46.7	3,491	53.3
Electrical	16,162	7,406	45.8	8,756	54.2
Engineering science	1,792	596	33.3	1,196	66.7
Industrial	5,017	2,624	52.3	2,393	47.7
Mechanical	8,326	3,775	45.3	4,551	54.7
Metallurgical and materials	2,411	687	28.5	1,724	71.5
Mining	334	141	42.2	193	57.8
Nuclear	1,307	460	35.2	847	64.8
Petroleum	331	134	40.5	197	59.5
Other engineering	2,827	1,100	38.9	1,727	61.1
Physical sciences	34,696	9,576	27.6	25,120	72.4
Astronomy	531	142	26.7	389	73.3
Atmospheric sciences	815	234	28.7	581	71.3
Chemistry	15,813	4,431	28.0	11,382	72.0
Geosciences	3,625	1,151	31.8	2,474	68.2
Oceanography	1,108	368	33.2	740	66.8
Physics	12,804	3,250	25.4	9,554	74.6
Mathematical sciences	15,417	5,572	36.1	9,845	63.9
Applied mathematics	1,804	720	39.9	1,084	60.1
Mathematics	12,123	4,401	36.3	7,722	63.7
Statistics	1,490	451	30.3	1,039	69.7
Life sciences	30,810	9,297	30.2	21,513	69.8
Agriculture	6,856	2,085	30.4	4,771	69.6
Biochemistry	3,481	897	25.8	2,584	74.2
Biology	7,197	2,296	31.9	4,901	68.1
Botany	2,588	620	24.0	1,968	76.0
Microbiology	1,998	644	32.2	1,354	67.8
Pharmacology	1,304	363	27.8	941	72.2
Physiology	1,337	393	29.4	944	70.6
Zoology	3,902	1,205	30.9	2,697	69.1
Other life sciences	2,147	794	37.0	1,353	63.0
Psychology	13,763	4,118	29.9	9,645	70.1
Social sciences	37,592	13,334	35.5	24,258	64.5
Agricultural economics	893	247	27.7	646	72.3
Anthropology	3,511	1,084	30.9	2,427	69.1
Economics (except agricultural)	8,834	3,180	36.0	5,654	64.0
Geography	1,997	560	28.0	1,437	72.0
History and philosophy of science	766	233	30.4	533	69.6
Linguistics	2,845	1,054	37.0	1,791	63.0
Political science	10,548	4,164	39.5	6,382	60.5
Sociology	6,896	2,301	33.4	4,595	66.6
Sociology and anthropology	1,304	511	39.2	793	60.8

1:52

Table C–6. *—Graduate students in doctorate departments, by field of science, level of study, and enrollment status, 1969*

Area and field of science	Full time					Part time				
	Total	First year		Beyond first year		Total	First year		Beyond first year	
		Number	Percent of total	Number	Percent of total		Number	Percent of total	Number	Percent of total
Total	141,199	46,371	32.8	94,828	67.2	43,646	18,283	41.9	25,363	58.1
Engineering	30,820	12,000	38.9	18,820	61.1	21,747	10,757	49.5	10,990	50.5
Aeronautical	1,504	521	34.6	983	65.4	658	258	39.2	400	60.8
Agricultural	433	138	31.9	295	68.1	100	11	11.0	89	89.0
Chemical	3,204	1,079	33.7	2,125	66.3	1,615	772	47.8	843	52.2
Civil	4,543	2,147	47.3	2,396	52.7	2,003	908	45.3	1,095	54.7
Electrical	7,518	2,986	39.7	4,532	60.3	8,644	4,420	51.1	4,224	48.9
Engineering science	1,207	337	27.9	870	72.1	585	259	44.3	326	55.7
Industrial	2,405	1,190	49.5	1,215	50.5	2,612	1,434	54.9	1,178	45.1
Mechanical	4,547	1,789	39.3	2,758	60.7	3,779	1,986	52.6	1,793	47.4
Metallurgical and materials	1,802	483	26.8	1,319	73.2	609	204	33.5	405	66.5
Mining	299	135	45.2	164	54.8	35	6	17.1	29	82.9
Nuclear	1,002	332	33.1	670	66.9	305	128	42.0	177	58.0
Petroleum	192	72	37.5	120	62.5	139	62	44.6	77	55.4
Other engineering	2,164	791	36.6	1,373	63.4	663	309	46.6	354	53.4
Physical sciences	30,175	8,098	26.8	22,077	73.2	4,521	1,478	32.7	3,043	67.3
Astronomy	512	141	27.5	371	72.5	19	1	5.3	18	94.7
Atmospheric sciences	739	217	29.4	522	70.6	76	17	22.4	59	77.6
Chemistry	13,634	3,619	26.5	10,015	73.5	2,179	812	37.3	1,367	62.7
Geosciences	3,297	1,074	32.6	2,223	67.4	328	77	23.5	251	76.5
Oceanography	984	352	35.8	632	64.2	124	16	12.9	108	87.1
Physics	11,009	2,695	24.5	8,314	75.5	1,795	555	30.9	1,240	69.1
Mathematical sciences	11,727	4,199	35.8	7,528	64.2	3,690	1,373	37.2	2,317	62.8
Applied mathematics	1,447	578	39.9	869	60.1	357	142	39.8	215	60.2
Mathematics	9,091	3,247	35.7	5,844	64.3	3,032	1,154	38.1	1,878	61.9
Statistics	1,189	374	31.5	815	68.5	301	77	25.6	224	74.4
Life sciences	27,588	8,393	30.4	19,195	69.6	3,222	904	28.1	2,318	71.9
Agriculture	5,963	1,917	32.1	4,046	67.9	893	168	18.8	725	81.2
Biochemistry	3,256	826	25.4	2,430	74.6	225	71	31.6	154	68.4
Biology	6,282	1,936	30.8	4,346	69.2	915	360	39.3	555	60.7
Botany	2,316	583	25.2	1,733	74.8	272	37	13.6	235	86.4
Microbiology	4,838	605	32.9	1,233	67.1	160	39	24.4	121	75.6
Pharmacology	1,195	342	28.6	853	71.4	109	21	19.3	88	80.7
Physiology	1,250	371	29.7	879	70.3	97	22	25.3	65	74.7
Zoology	3,659	1,134	31.0	2,525	69.0	243	71	29.2	172	70.8
Other life sciences	1,829	679	37.1	1,150	62.9	318	115	36.2	203	63.8
Psychology	11,918	3,592	30.1	8,326	69.9	1,845	526	28.5	1,319	71.5
Social sciences	28,971	10,069	34.8	18,902	65.2	8,621	3,245	37.6	5,376	62.4
Agricultural economics	765	237	30.2	528	69.8	126	10	8.3	86	96.7
Anthropology	3,116	965	31.0	2,151	69.0	395	119	30.1	276	69.9
Economics (except agricultural)	6,881	2,465	35.8	4,416	64.2	1,953	715	36.6	1,238	63.4
Geography	1,709	520	30.4	1,189	69.6	248	40	15.9	209	86.1
History and philosophy of science	688	219	31.8	469	68.2	78	14	17.9	64	82.1
Linguistics	2,191	930	37.9	1,261	62.1	634	234	36.9	400	63.7
Political science	7,308	2,819	37.8	4,694	62.4	2,943	1,241	44.2	1,696	55.8
Sociology	5,366	1,779	33.2	3,587	66.8	1,330	522	34.1	1,808	65.9
Sociology and anthropology	752	255	34.0	477	65.2	170	256	44.6	316	55.2

Table C–7.—*Full-time graduate students in doctorate departments, by field of science and type of support, 1969*

Area and field of science	Total		Fellowships and traineeships		Research assistantships		Teaching assistantships		Other types of support	
	Number	Percent distribution	Number	Percent of total	Number	Percent of total	Number	Percent of total	Number	Percent of total
Total	141,199	100.0	41,734	29.6	30,471	21.6	32,991	23.4	36,003	25.5
Engineering	30,820	21.8	8,072	26.2	9,048	29.4	4,213	13.7	9,487	30.8
Aeronautical	1,504	1.1	397	26.4	497	33.0	202	13.4	408	27.1
Agricultural	433	.3	110	25.4	197	45.5	36	8.3	90	20.8
Chemical	3,204	2.3	1,050	32.8	1,007	31.4	522	16.3	625	19.5
Civil	4,543	3.2	1,289	28.4	1,205	26.5	465	10.2	1,584	34.9
Electrical	7,518	5.3	1,578	21.0	2,027	27.0	1,340	17.8	2,573	34.2
Engineering science	1,207	.9	396	32.8	358	29.7	264	21.9	189	15.7
Industrial	2,405	1.7	563	23.4	418	17.4	285	11.9	1,139	47.4
Mechanical	4,547	3.2	996	21.9	1,218	26.8	658	14.5	1,675	36.8
Metallurgical and materials	1,802	1.3	412	22.9	1,072	59.5	156	8.7	162	9.0
Mining	299	.2	85	28.4	100	33.4	32	10.7	82	27.4
Nuclear	1,002	.7	458	45.7	242	24.2	88	8.8	214	21.4
Petroleum	192	.1	56	29.2	55	28.6	31	16.1	50	26.0
Other engineering	2,164	1.5	682	31.5	652	30.1	134	6.2	696	32.2
Physical sciences	30,175	21.4	7,096	23.5	9,404	31.2	10,072	33.4	3,603	11.9
Astronomy	512	.4	177	34.6	203	39.6	91	17.8	41	8.0
Atmospheric sciences	739	.5	158	21.4	353	47.8	41	5.5	187	25.3
Chemistry	13,634	9.7	3,293	24.2	3,647	26.7	5,549	40.6	1,154	8.5
Geosciences	3,297	2.3	811	24.6	696	21.1	1,072	32.5	718	21.8
Oceanography	984	.7	242	24.6	454	46.1	44	4.5	244	24.8
Physics	11,009	7.8	2,415	21.9	4,051	36.8	3,284	29.8	1,259	11.4
Mathematical sciences	11,727	8.3	2,794	23.8	1,154	9.8	4,798	40.9	2,981	25.4
Applied mathematics	1,447	1.0	264	18.2	407	28.1	272	18.8	504	34.8
Mathematics	9,091	6.4	2,124	23.4	522	5.7	4,276	47.0	2,169	23.9
Statistics	1,189	.8	406	34.1	225	18.9	250	21.0	306	25.9
Life sciences	27,588	19.5	9,692	35.1	6,399	23.2	6,088	22.1	5,409	19.6
Agriculture	5,963	4.2	1,296	21.6	2,840	47.6	497	8.3	1,340	22.5
Biochemistry	3,256	2.3	1,812	55.7	811	24.9	344	10.6	289	8.9
Biology	6,282	4.4	2,399	38.0	595	9.5	1,895	30.2	1,403	22.3
Botany	2,319	1.6	514	22.2	692	30.0	819	35.4	341	14.5
Microbiology	1,659	1.3	971	47.4	346	16.8	361	19.6	289	14.1
Pharmacology	1,195	.8	539	45.1	204	17.1	236	21.4	196	16.4
Physiology	1,250	.9	631	50.5	180	14.4	191	14.5	244	20.3
Zoology	3,659	2.6	883	24.1	569	15.6	1,439	39.3	769	21.0
Other life sciences	1,829	1.3	765	41.7	252	13.8	296	16.2	114	20.3
Psychology	11,919	8.4	4,736	39.8	1,655	14.2	2,260	19.0	3,227	27.1
Social sciences	28,971	20.5	9,342	32.2	2,775	9.6	5,559	19.2	11,296	39.0
Agricultural economics	785	.6	192	24.5	362	46.1	26	3.3	205	26.1
Anthropology	3,115	2.2	1,155	36.4	179	5.7	549	17.6	1,255	40.3
Economics (except agricultural)	6,661	4.9	2,092	30.4	659	11.9	1,679	31.3	2,452	36.2
Geography	1,769	1.2	491	21.5	111	5.9	573	33.5	601	34.2
History and philosophy of science	606	.5	249	42.0	17	2.5	149	26.2	242	29.3
Linguistics	2,191	1.6	717	34.6	149	7.3	412	19.0	742	39.3
Political science	7,559	5.3	2,394	36.7	149	2.3	1,190	11.7	3,479	49.2
Sociology	5,566	3.9	1,859	34.0	125	9.0	1,043	19.4	1,537	34.4
Sociology and anthropology	722	.5	201	28.9	42	9.3	139	19.9	242	46.7

Table C–8.—*Full-time graduate students in doctorate departments, by type of support, level of study, and citizenship, 1969*

Type of support	Total		First year		Beyond first year	
	Number	Percent distribution	Total	Percent of total	Total	Percent of total
	All full-time students					
Total	141,199	100.0	46,371	32.8	94,828	67.2
Fellowships and traineeships	41,734	29.6	12,487	29.9	29,247	70.1
Research assistantships	30,471	21.6	6,339	20.8	24,132	79.2
Teaching assistantships	32,991	23.4	11,285	34.2	21,706	65.8
Other support	36,003	25.5	16,260	45.2	19,743	54.8
	U.S. citizens					
Total	113,167	100.0	36,584	32.3	76,583	67.7
Fellowships and traineeships	34,462	22.2	10,527	28.9	25,935	71.1
Research assistantships	21,466	19.0	4,423	20.6	17,043	79.4
Teaching assistantships	26,505	23.4	9,143	34.5	17,362	65.5
Other support	28,754	25.4	12,491	43.4	16,263	56.6
	Foreign students					
Total	28,032	100.0	9,787	34.9	18,245	65.1
Fellowships and traineeships	5,272	18.8	1,960	37.2	3,312	62.8
Research assistantships	9,005	32.1	1,916	21.3	7,089	78.7
Teaching assistantships	6,506	23.2	2,142	32.9	4,364	67.1
Other support	7,249	25.9	3,769	52.0	3,480	48.0

Table C–9a.—*Full-time graduate students in doctorate departments, by area of science, type of support, and level of study, 1969*

Area of science	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
	All full-time students				
Total	141,199	41,734	30,471	32,991	36,003
Engineering	30,820	8,072	9,048	4,213	9,487
Physical sciences	30,175	7,096	9,404	10,072	3,603
Mathematical sciences	11,727	2,794	1,154	4,798	2,981
Life sciences	27,588	9,692	6,399	6,088	5,409
Psychology	11,918	4,738	1,693	2,260	3,227
Social sciences	28,971	9,342	2,773	5,560	11,296
	First year				
Total	46,371	12,487	6,339	11,285	16,260
Engineering	12,000	3,085	2,284	1,513	5,118
Physical sciences	8,098	1,737	888	4,068	1,405
Mathematical sciences	4,199	958	208	1,546	1,487
Life sciences	8,393	2,266	1,624	2,098	2,405
Psychology	3,592	1,374	558	679	981
Social sciences	10,089	3,067	777	1,381	4,864
	Beyond first year				
Total	94,828	29,247	24,132	21,706	19,743
Engineering	18,820	4,987	6,764	2,700	4,369
Physical sciences	22,077	5,359	8,516	6,004	2,198
Mathematical sciences	7,528	1,836	946	3,252	1,494
Life sciences	19,195	7,426	4,775	3,990	3,004
Psychology	8,326	3,364	1,135	1,581	2,246
Social sciences	18,882	6,275	1,996	4,179	6,432

Table C-9b.—*Percent distributions of full-time graduate students in doctorate departments, by area of science, type of support, and level of study, 1969*

Area of science	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
	All full-time students				
Total	100.0	100.0	100.0	100.0	100.0
Engineering	21.0	19.3	29.7	12.8	26.4
Physical sciences	21.6	17.0	30.9	30.5	19.0
Mathematical sciences	6.3	6.7	3.6	14.5	8.3
Life sciences	19.5	29.2	21.0	18.5	15.0
Psychology	9.4	11.4	5.6	6.9	9.0
Social sciences	22.1	22.4	9.1	16.9	21.4
	First year				
Total	100.0	100.0	100.0	100.0	100.0
Engineering	21.9	24.7	36.0	13.4	31.5
Physical sciences	17.5	13.9	14.0	36.0	8.6
Mathematical sciences	9.1	7.7	3.3	13.7	9.1
Life sciences	24.1	34.1	25.6	18.6	14.8
Psychology	7.7	11.0	6.8	6.0	6.0
Social sciences	21.8	24.6	12.3	12.2	29.9
	Beyond first year				
Total	100.0	100.0	100.0	100.0	100.0
Engineering	19.9	17.1	28.0	12.4	22.1
Physical sciences	23.2	18.3	35.3	27.7	11.1
Mathematical sciences	7.3	6.3	3.9	15.0	7.6
Life sciences	20.2	25.4	19.0	18.4	15.2
Psychology	8.6	11.5	4.7	7.3	11.4
Social sciences	19.9	21.5	9.3	19.3	32.6

Area of science	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
	All full-time students				
Total	100.0	29.6	21.6	23.4	25.5
Engineering	100.0	26.2	29.4	13.7	30.8
Physical sciences	100.0	23.5	31.2	33.4	11.9
Mathematical sciences	100.0	23.8	9.8	40.9	25.4
Life sciences	100.0	35.1	23.2	22.1	19.6
Psychology	100.0	39.8	14.2	19.0	27.1
Social sciences	100.0	32.2	9.6	19.2	39.0
	First year				
Total	100.0	26.9	13.7	24.3	35.1
Engineering	100.0	25.7	19.0	12.6	42.7
Physical sciences	100.0	21.4	11.0	50.2	17.3
Mathematical sciences	100.0	22.8	5.0	36.8	35.4
Life sciences	100.0	27.0	19.3	25.0	28.7
Psychology	100.0	38.3	15.5	18.9	27.3
Social sciences	100.0	30.4	7.7	13.7	48.2
	Beyond first year				
Total	100.0	30.8	25.4	22.9	20.8
Engineering	100.0	26.5	35.9	14.3	23.2
Physical sciences	100.0	24.3	38.6	27.2	10.0
Mathematical sciences	100.0	24.4	12.6	43.2	19.8
Life sciences	100.0	38.7	24.9	20.8	15.6
Psychology	100.0	40.4	13.6	19.0	27.0
Social sciences	100.0	33.2	10.6	22.1	34.1

Table C–10a.—*Full-time graduate students in doctorate departments, by source of support and area of science, 1969*

Source of support	Total	Engineering	Physical sciences	Mathematical sciences	Life sciences	Psychology	Social sciences
Total	141,199	30,820	30,175	11,727	27,588	11,919	28,971
All U.S. sources, total	138,954	29,815	29,881	11,601	27,332	11,875	28,550
U.S. Government	51,420	12,334	19,187	3,223	11,513	5,127	6,036
Atomic Energy Commission	2,940	845	1,819	40	223	1	12
Department of Agriculture	1,091	61	43	13	788	.....	186
Department of Defense	4,963	2,732	1,438	324	151	178	140
Department of Health, Education, and Welfare, total	20,611	2,229	3,092	748	7,287	3,580	3,725
National Defense Education Act	6,856	1,053	1,313	396	1,325	593	2,076
National Institutes of Health	12,199	1,025	1,679	196	5,614	2,687	1,198
Other HEW	1,564	151	60	56	298	593	451
National Aeronautics and Space Administration	2,682	1,208	910	198	198	62	46
National Science Foundation	12,991	3,055	4,984	1,708	1,895	427	1,922
All other U.S. Government agencies	6,251	2,194	1,201	292	1,478	649	437
Other U.S. sources	87,534	17,481	10,694	8,378	15,719	6,748	28,514
Institutions and State and local governments	50,471	9,025	12,497	5,886	9,679	3,869	10,369
Private foundations	3,936	641	647	125	749	252	1,481
Industry	4,569	2,559	715	200	426	68	170
Self-support	26,307	5,402	2,501	2,046	4,111	2,191	9,966
All other U.S. sources	2,152	464	330	127	501	330	488
Foreign sources, total	2,245	1,005	294	126	256	48	421

Table C–10b.—*Percent distributions of full-time graduate students in doctorate departments, by source of support and area of science, 1969*

Source of support	Total	Engineering	Physical sciences	Mathematical sciences	Life sciences	Psychology	Social sciences
	By source of support						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All U.S. sources, total	98.4	96.7	99.0	98.9	98.7	99.6	98.5
U.S. Government	36.6	40.0	43.7	27.5	41.7	43.0	21.5
Atomic Energy Commission	2.1	2.7	6.0	.3	.8	(a)	(a)
Department of Agriculture	.8	.2	.2	.1	2.8		.6
Department of Defense	3.5	8.9	4.8	2.8	.5	1.5	.6
Department of Health, Education, and Welfare, total	14.6	7.2	10.2	6.4	26.2	30.0	12.9
National Defense Education Act	4.9	3.4	4.5	4.3	4.8	4.7	7.1
National Institutes of Health	8.6	3.3	5.6	1.6	20.3	20.9	4.1
Other HEW	1.1	.5	.2	.5	1.1	4.4	1.6
National Aeronautics and Space Administration	1.9	4.2	3.0	1.6	.7	.4	.1
National Science Foundation	9.2	9.9	15.5	14.6	6.9	3.9	4.1
All other U.S. Government agencies	4.5	6.8	4.0	1.7	3.9	7.1	3.2
Other U.S. sources	61.9	56.7	55.3	71.4	57.0	56.6	77.0
Institutions and State and local governments	35.7	26.0	41.4	50.2	35.8	32.7	35.5
Private foundations	2.7	2.1	2.1	1.1	2.7	2.1	5.0
Industry	3.2	9.5	2.4	1.7	1.8	.5	.6
Self-support	18.6	17.8	8.3	17.4	14.9	18.3	34.5
All other U.S. sources	1.5	1.3	1.1	1.1	1.8	2.9	1.5
Foreign sources, total	1.6	3.3	1.0	1.1	1.3	.4	1.5
	By area of science						
Total	100.0	21.8	21.4	8.3	19.5	8.4	20.5
All U.S. sources, total	100.0	21.5	21.5	8.3	19.6	8.5	20.5
U.S. Government	100.0	23.9	25.5	6.2	22.3	9.9	12.1
Atomic Energy Commission	100.0	28.7	61.9	1.4	7.6	(a)	.4
Department of Agriculture	100.0	5.6	5.8	1.2	70.2		17.2
Department of Defense	100.0	55.0	29.0	6.5	2.6	3.6	3.2
Department of Health, Education, and Welfare, total	100.0	10.8	15.0	3.6	35.1	17.4	18.1
National Defense Education Act	100.0	15.4	19.7	7.4	19.3	8.2	30.0
National Institutes of Health	100.0	8.4	13.8	1.5	46.1	20.4	9.8
Other HEW	100.0	9.7	3.8	3.6	19.1	33.9	30.0
National Aeronautics and Space Administration	100.0	48.8	33.9	7.0	6.8	1.9	1.6
National Science Foundation	100.0	23.5	35.9	13.2	14.6	3.6	9.2
All other U.S. Government agencies	100.0	33.1	18.9	3.2	17.0	13.4	14.4
Other U.S. sources	100.0	20.0	19.1	9.6	18.0	7.7	25.6
Institutions and State and local governments	100.0	15.9	24.8	11.7	19.6	7.7	20.4
Private foundations	100.0	16.7	16.8	3.3	19.3	6.6	37.4
Industry	100.0	64.1	15.7	4.4	10.7	1.4	3.8
Self-support	100.0	20.8	9.5	7.8	15.6	8.3	38.0
All other U.S. sources	100.0	18.7	15.7	5.9	23.3	16.3	20.1
Foreign sources, total	100.0	44.8	13.1	5.6	15.9	1.9	18.8

(a) Less than 0.05 percent.

Table C–11a.—*Full-time graduate students in doctorate departments, by source and type of support, 1969*

Source of support	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
Total	141,199	41,734	30,471	32,991	36,003
All U.S. sources, total	138,954	40,465	30,414	32,991	35,084
U.S. Government	51,620	28,707	19,646	327	2,940
Atomic Energy Commission	2,940	500	2,395	----------	45
Department of Agriculture	1,091	56	949	----------	86
Department of Defense	4,963	370	3,525	----------	1,068
Department of Health, Education, and Welfare, total	20,611	16,895	3,492	64	160
National Defense Education Act	6,858	6,753	94	----------	11
National Institutes of Health	12,189	9,086	2,965	29	109
Other HEW	1,564	1,056	433	35	40
National Aeronautics and Space Administration	2,683	1,353	1,242	----------	88
National Science Foundation	12,981	7,255	5,225	122	379
All other U.S. Government agencies	6,351	2,278	2,818	141	1,114
Other U.S. sources	87,334	11,758	10,768	32,664	32,144
Institutions and State and local governments	50,471	7,191	8,451	32,524	2,305
Private foundations	3,836	2,515	872	78	371
Industry	4,568	1,663	1,142	9	1,754
Self-support	26,307	----------	----------	----------	26,307
All other U.S. sources	2,152	389	303	53	1,407
Foreign sources, total	2,245	1,269	57	----------	919

Table C–11b.—*Percent distributions of full-time graduate students in doctorate departments, by source and type of support, 1969*

Source of support	Total	Fellowships and traineeships	Research assistantships	Teaching assistantships	Other types of support
	By source of support				
Total	100.0	100.0	100.0	100.0	100.0
All U.S. sources, total	98.4	97.0	99.8	100.0	97.4
U.S. Government	36.6	68.8	64.5	1.0	8.2
Atomic Energy Commission	2.1	1.2	7.9	----	.1
Department of Agriculture	.8	.1	3.1	----	.2
Department of Defense	3.5	.9	11.6	----	3.0
Department of Health, Education, and Welfare, total	14.6	40.5	11.5	.2	.4
National Defense Educational Act	4.9	16.2	.3	----	(a)
National Institutes of Health	8.6	21.8	9.7	.1	.3
Other HEW	1.1	2.5	1.4	.1	.1
National Aeronautics and Space Administration	1.9	3.2	4.1	----	.2
National Science Foundation	9.2	17.4	17.1	.4	1.1
All other U.S. Government agencies	4.5	5.5	9.2	.4	3.1
Other U.S. sources	61.9	28.2	35.3	99.0	89.3
Institutions and State and local governments	35.7	17.2	27.7	98.6	6.4
Private foundations	2.7	6.0	2.9	.2	1.0
Industry	3.2	4.0	3.7	(a)	4.9
Self-support	18.6	----	----	----	73.1
All other U.S. sources	1.5	.9	1.0	.2	3.9
Foreign sources, total	1.6	3.0	.2	----	2.6
	By type of support				
Total	100.0	29.6	21.6	23.4	25.5
All U.S. sources, total	100.0	29.1	21.9	23.7	25.2
U.S. Government	100.0	55.6	38.1	.6	5.7
Atomic Energy Commission	100.0	17.0	81.5	----	1.5
Department of Agriculture	100.0	5.1	87.0	----	7.9
Department of Defense	100.0	7.5	71.0	----	21.5
Department of Health, Education, and Welfare, total	100.0	82.0	16.9	.3	.8
National Defense Education Act	100.0	98.5	1.4	----	.2
National Institutes of Health	100.0	74.5	24.3	.2	.9
Other HEW	100.0	67.5	27.7	2.2	2.6
National Aeronautics and Space Administration	100.0	50.4	46.3	----	3.3
National Science Foundation	100.0	55.9	40.3	.9	2.9
All other U.S. Government agencies	100.0	35.9	44.4	2.2	17.5
Other U.S. sources	100.0	13.5	12.3	37.4	36.8
Institutions and State and local governments	100.0	14.2	16.7	64.4	4.6
Private foundations	100.0	65.6	22.7	2.0	9.7
Industry	100.0	36.4	25.0	.2	38.4
Self-support	100.0	----	----	----	100.0
All other U.S. sources	100.0	18.1	14.1	2.5	65.4
Foreign sources, total	100.0	56.5	2.5	----	40.9

(a) Less than 0.05 percent.

Table C–12.—*Full-time graduate students in doctorate departments supported by U.S. Government sources, by Federal agency and citizenship, 1969*

Federal agency	Total		U.S. citizens		Foreign students	
	Number	Percent distribution	Number	Percent of total	Number	Percent of total
Total	51,620	100.0	44,760	86.7	6,860	13.3
Atomic Energy Commission	2,940	5.7	2,340	79.6	600	20.4
Department of Agriculture	1,091	2.1	857	78.6	234	21.4
Department of Defense	4,963	9.6	3,767	75.9	1,196	24.1
Department of Health, Education, and Welfare, total	20,611	39.9	19,535	94.8	1,076	5.2
National Defense Education Act	6,858	13.3	6,792	99.0	66	1.0
National Institutes of Health	12,189	23.6	11,267	92.4	922	7.6
Other HEW	1,564	3.0	1,476	94.4	88	5.6
National Aeronautics and Space Administration	2,683	5.2	2,236	83.3	447	16.7
National Science Foundation	12,981	25.1	11,336	87.3	1,645	12.7
All other U.S. Government agencies	6,351	12.3	4,689	73.8	1,662	26.2

Table C–13a.—*Full-time graduate students in doctorate departments supported by U.S. Government sources, by field of science and Federal agency, 1969*

Area and field of science	Total	Department of Defense	Department of Health, Education, and Welfare		National Science Foundation	All other agencies
			National Defense Education Act	National Institutes of Health		
Total	51,620	4,963	6,858	12,981	12,981	14,629
Engineering	12,334	2,732	1,053	1,025	3,055	4,469
Aeronautical	837	251	53	8	145	380
Agricultural	146	3	27	12	26	78
Chemical	1,228	101	157	121	452	397
Civil	1,710	264	94	296	323	733
Electrical	2,749	656	243	187	871	792
Engineering science	533	80	60	32	140	221
Industrial	743	287	71	21	161	203
Mechanical	1,742	487	180	108	398	569
Metallurgical and materials	1,044	315	80	50	209	390
Mining	77	9	10	----	22	36
Nuclear	600	59	35	15	96	395
Petroleum	61	14	4	3	20	20
Other engineering	864	206	39	172	192	255
Physical sciences	13,187	1,438	1,353	1,679	4,664	4,053
Astronomy	280	10	27	----	151	92
Atmospheric sciences	545	152	15	31	185	162
Chemistry	5,328	314	596	1,540	1,792	1,086
Geosciences	1,087	131	203	7	484	262
Oceanography	527	74	37	23	201	192
Physics	5,420	757	475	78	1,851	2,259
Mathematical sciences	3,223	324	506	186	1,708	499
Applied mathematics	517	127	42	25	205	118
Mathematics	2,268	131	400	33	1,393	311
Statistics	438	66	64	128	110	70
Life sciences	11,513	131	1,325	5,614	1,895	2,548
Agriculture	2,106	30	298	384	234	1,160
Biochemistry	2,175	16	141	1,553	252	213
Biology	2,377	17	274	1,161	559	366
Botany	689	3	152	137	212	185
Microbiology	1,044	13	84	696	106	145
Pharmacology	551	9	58	406	38	40
Physiology	690	31	56	478	64	61
Zoology	1,078	5	166	374	288	245
Other life sciences	803	7	96	425	142	133
Psychology	5,127	178	563	2,487	467	1,432
Social sciences	6,236	160	2,058	1,198	1,192	1,628
Agricultural economics	255	----	45	----	20	190
Anthropology	897	1	222	373	184	117
Economics (except agricultural)	1,100	17	405	32	349	297
Geography	383	20	159	9	71	124
History and philosophy of science	177	----	117	3	54	3
Linguistics	595	18	223	49	102	203
Political science	1,182	95	564	40	198	285
Sociology	1,456	9	275	600	197	375
Sociology and anthropology	191	----	48	92	17	34

Table C–13b.—*Percent distribution of full-time graduate students in doctorate departments supported by U.S. Government sources, by field of science, 1969*

Area and field of science	Total	Department of Defense	Department of Health, Education, and Welfare		National Science Foundation	All other agencies
			National Defense Education Act	National Institutes of Health		
Total	100.0	100.0	100.0	100.0	100.0	100.0
Engineering	23.9	55.0	15.4	8.4	23.5	30.5
Aeronautical	1.6	5.1	.8	.1	1.1	2.6
Agricultural	.3	.1	.4	.1	.2	.5
Chemical	2.4	2.0	2.3	1.0	3.5	2.7
Civil	3.3	5.3	1.4	2.4	2.5	5.0
Electrical	5.3	13.2	3.5	1.5	6.7	5.4
Engineering science	1.0	1.6	.9	.3	1.1	1.5
Industrial	1.4	5.8	1.0	.2	1.2	1.4
Mechanical	3.4	9.8	2.6	.9	3.1	3.9
Metallurgical and materials	2.0	6.3	1.2	.4	1.6	2.7
Mining	.1	.2	.1	----	.2	.2
Nuclear	1.2	1.2	.5	.1	.7	2.7
Petroleum	.1	.3	.1	(a)	.2	.1
Other engineering	1.7	4.2	.6	1.4	1.5	1.7
Physical sciences	25.5	29.0	19.7	13.8	35.9	27.7
Astronomy	.5	.2	.4	----	1.2	.6
Atmospheric sciences	1.1	3.1	.2	.3	1.4	1.1
Chemistry	10.3	6.3	8.7	12.6	13.8	7.4
Geosciences	2.1	2.6	3.0	.1	3.7	1.8
Oceanography	1.0	1.5	.5	.2	1.5	1.3
Physics	10.5	15.3	6.9	.6	14.3	15.4
Mathematical sciences	6.2	6.5	7.4	1.5	13.2	3.4
Applied mathematics	1.0	2.6	.6	.2	1.6	.8
Mathematics	4.4	2.6	5.8	.8	10.7	2.1
Statistics	.8	1.3	.3	1.1	.8	.5
Life sciences	22.3	2.6	19.3	46.1	14.6	17.4
Agriculture	4.1	.6	4.3	3.2	1.8	7.9
Biochemistry	4.2	.3	2.1	12.7	1.9	1.5
Biology	4.6	.3	4.0	9.5	4.3	2.5
Botany	1.3	.1	2.2	1.1	1.6	1.3
Microbiology	2.0	.3	1.2	5.7	.8	1.0
Pharmacology	1.1	.2	.8	3.3	.3	.3
Physiology	1.3	.6	.8	3.9	.5	.4
Zoology	2.1	.1	2.4	3.1	2.2	1.7
Other life sciences	1.6	.1	1.4	3.5	1.1	.9
Psychology	9.9	3.6	8.2	20.4	3.6	9.8
Social sciences	12.1	3.2	30.0	9.8	9.2	11.1
Agricultural economics	.5	----	.7	----	.2	1.3
Anthropology	1.7	(a)	3.2	3.1	1.4	.8
Economics (except agricultural)	2.1	.3	5.9	.3	2.7	2.0
Geography	.7	.4	2.3	.1	.5	.8
History and philosophy of science	.3	----	1.7	(a)	.4	(a)
Linguistics	1.2	.4	3.3	.4	.8	1.4
Political science	2.3	1.9	8.2	.3	1.5	1.9
Sociology	2.8	.2	4.0	4.9	1.5	2.6
Sociology and anthropology	.4	----	.7	.8	.1	.2

[a] Less than 0.05 percent.

Table C–13c.—*Percent distribution of full-time graduate students in doctorate departments supported by U.S. Government sources, by Federal agency, 1969*

Area and field of science	Total	Department of Defense	Department of Health, Education, and Welfare		National Science Foundation	All other agencies
			National Defense Education Act	National Institutes of Health		
Total	100.0	9.6	13.3	23.6	25.1	28.3
Engineering	100.0	22.2	8.5	8.3	24.8	36.2
Aeronautical	100.0	30.0	6.3	1.0	17.3	45.4
Agricultural	100.0	2.1	18.5	8.2	17.8	53.4
Chemical	100.0	8.2	12.8	9.9	36.8	32.3
Civil	100.0	15.4	5.5	17.3	18.9	42.9
Electrical	100.0	23.9	8.8	6.8	31.7	28.8
Engineering science	100.0	15.0	11.3	6.0	26.3	41.5
Industrial	100.0	38.6	9.6	2.8	21.7	27.3
Mechanical	100.0	28.0	10.3	6.2	22.8	32.7
Metallurgical and materials	100.0	30.2	7.7	4.8	20.0	37.4
Mining	100.0	11.7	13.0	----	28.6	46.8
Nuclear	100.0	9.8	5.8	2.5	16.0	65.8
Petroleum	100.0	23.0	6.6	4.9	32.8	32.8
Other engineering	100.0	23.8	4.5	19.9	22.2	29.5
Physical sciences	100.0	10.9	10.3	12.7	35.4	30.7
Astronomy	100.0	3.6	9.6	----	53.9	32.9
Atmospheric sciences	100.0	27.9	2.8	5.7	33.9	29.7
Chemistry	100.0	5.9	11.2	28.9	33.6	20.4
Geosciences	100.0	12.1	18.7	.6	44.5	24.1
Oceanography	100.0	14.0	7.0	4.4	38.1	36.4
Physics	100.0	14.0	8.8	1.4	34.2	41.7
Mathematical sciences	100.0	10.1	15.7	5.8	53.0	15.5
Applied mathematics	100.0	24.6	8.1	4.8	39.7	22.8
Mathematics	100.0	5.8	17.6	1.5	61.4	13.7
Statistics	100.0	15.1	14.6	29.2	25.1	16.0
Life sciences	100.0	1.1	11.5	48.8	16.5	22.1
Agriculture	100.0	1.4	14.2	18.2	11.1	55.1
Biochemistry	100.0	.7	6.5	71.4	11.6	9.8
Biology	100.0	.7	11.5	48.8	23.5	15.4
Botany	100.0	.4	22.1	19.9	30.8	26.9
Microbiology	100.0	1.2	8.0	66.7	10.2	13.9
Pharmacology	100.0	1.6	10.5	73.7	6.9	7.3
Physiology	100.0	4.5	8.1	69.3	9.3	8.8
Zoology	100.0	.5	15.4	34.7	26.7	22.7
Other life sciences	100.0	.9	12.0	52.9	17.7	16.6
Psychology	100.0	3.5	11.0	48.5	9.1	27.9
Social sciences	100.0	2.6	33.0	19.2	19.1	26.1
Agricultural economics	100.0	----	17.6	----	7.8	74.5
Anthropology	100.0	.1	24.7	41.6	20.5	13.0
Economics (except agricultural)	100.0	1.5	36.8	2.9	31.7	27.0
Geography	100.0	5.2	41.5	2.3	18.5	32.4
History and philosophy of science	100.0	----	66.1	1.7	30.5	1.7
Linguistics	100.0	3.0	37.5	8.2	17.1	34.1
Political science	100.0	8.0	47.7	3.4	16.8	24.1
Sociology	100.0	.6	18.9	41.2	13.5	25.8
Sociology and anthropology	100.0	----	25.1	48.2	8.9	17.8

Table C–14.—*Full-time graduate students in doctorate departments supported by other U.S. sources, by field of science, 1969*

Area and field of science	Total		Institutions and State and local governments		Self-support		All other U.S. sources	
	Number	Percent distribution	Number	Percent of total	Number	Percent of total	Number	Percent of total
Total	87,334	100.0	50,471	57.8	26,307	30.1	10,556	12.1
Engineering	17,481	20.0	8,025	45.9	5,482	31.4	3,974	22.7
Aeronautical	647	.7	344	53.2	169	26.1	134	20.7
Agricultural	257	.3	179	69.6	46	17.9	32	12.5
Chemical	1,889	2.2	961	50.9	438	23.2	490	25.9
Civil	2,580	3.0	1,303	50.5	990	38.4	287	11.1
Electrical	4,629	5.3	2,028	43.8	1,637	35.4	964	20.8
Engineering science	647	.7	458	70.8	115	17.8	74	11.4
Industrial	1,509	1.7	576	38.2	553	36.6	380	25.2
Mechanical	2,633	3.0	1,121	42.6	1,025	38.9	487	18.5
Metallurgical and materials	718	.8	300	41.8	96	13.4	322	44.8
Mining	206	.2	131	63.6	45	21.8	30	14.6
Nuclear	382	.4	225	58.9	100	26.2	57	14.9
Petroleum	119	.1	57	47.9	29	24.4	33	27.7
Other engineering	1,265	1.4	342	27.0	239	18.9	684	54.1
Physical sciences	16,694	19.1	12,497	74.9	2,501	15.0	1,696	10.2
Astronomy	228	.3	187	82.0	25	11.0	16	7.0
Atmospheric sciences	183	.2	97	53.0	65	35.5	21	11.5
Chemistry	8,240	9.4	6,438	78.1	863	10.5	939	11.4
Geosciences	2,119	2.4	1,413	66.7	500	23.6	206	9.7
Oceanography	438	.5	177	40.4	116	26.5	145	33.1
Physics	5,486	6.3	4,185	76.3	932	17.0	369	6.7
Mathematical sciences	8,378	9.6	5,886	70.3	2,040	24.3	452	5.4
Applied mathematics	922	1.1	554	60.1	256	27.8	112	12.1
Mathematics	6,748	7.7	4,916	72.9	1,591	23.6	241	3.6
Statistics	708	.8	416	58.8	193	27.3	99	14.0
Life sciences	15,719	18.0	9,879	62.8	4,111	26.2	1,729	11.0
Agriculture	3,678	4.2	2,097	57.0	943	25.6	638	17.3
Biochemistry	1,058	1.2	704	66.5	193	18.2	161	15.2
Biology	3,885	4.4	2,483	63.9	1,083	27.9	319	8.2
Botany	1,577	1.8	1,173	74.4	305	19.3	99	6.3
Microbiology	778	.9	484	62.2	218	28.0	76	9.8
Pharmacology	638	.7	393	61.6	144	22.6	101	15.8
Physiology	553	.6	290	52.4	178	32.2	85	15.4
Zoology	2,549	2.9	1,721	67.5	669	26.2	159	6.2
Other life sciences	1,003	1.1	534	53.2	378	37.7	91	9.1
Psychology	6,748	7.7	3,902	57.8	2,181	32.3	665	9.9
Social sciences	22,314	25.6	10,282	46.1	9,992	44.8	2,040	9.1
Agricultural economics	519	.6	325	62.6	125	24.1	69	13.3
Anthropology	2,204	2.5	873	39.6	1,166	52.9	165	7.5
Economics (except agricultural)	5,565	6.4	2,841	51.1	2,270	40.8	454	8.2
Geography	1,300	1.5	723	55.6	498	38.3	79	6.1
History and philosophy of science	506	.6	294	58.1	175	34.6	37	7.3
Linguistics	1,573	1.8	724	46.0	755	48.0	94	6.0
Political science	6,270	7.2	2,488	39.7	3,114	49.7	668	10.7
Sociology	3,846	4.4	1,813	47.1	1,606	41.8	427	11.1
Sociology and anthropology	531	.6	201	37.9	283	53.3	47	8.9

Table C–15a.—*Total full-time graduate students in 2,338 science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change 1967–68	Percent change 1968–69
ALL SOURCES, total	118,367	121,661	123,311	2.8	1.4
U.S. Government	49,179	48,402	45,554	−1.6	−5.9
Other U.S. sources	67,294	71,592	75,897	6.4	6.0
Foreign sources	1,894	1,667	1,860	−12.0	11.6
U.S. citizens	98,398	99,442	98,714	1.1	−.7
U.S. Government	43,871	42,739	39,507	−2.6	−7.6
Other U.S. sources	54,493	56,677	59,172	4.0	4.4
Foreign sources	34	26	35	−23.5	34.6
Foreign students	19,969	22,219	24,597	11.3	10.7
U.S. Government	5,308	5,663	6,047	6.7	6.8
Other U.S. sources	12,801	14,915	16,725	16.5	12.1
Foreign sources	1,860	1,641	1,825	−11.8	11.2
FELLOWSHIPS AND TRAINEESHIPS, total	38,284	38,963	36,615	1.8	−6.0
U.S. Government	27,962	27,995	25,148	.1	−10.2
Other U.S. sources	9,257	9,896	10,398	6.9	5.1
Foreign sources	1,065	1,072	1,069	.7	−.3
U.S. citizens	34,158	34,569	32,071	1.2	−7.2
U.S. Government	27,302	27,321	24,512	.1	−10.3
Other U.S. sources	6,822	7,222	7,527	5.9	4.2
Foreign sources	34	26	32	−23.5	23.1
Foreign students	4,126	4,394	4,544	6.5	3.4
U.S. Government	660	674	636	2.1	−5.6
Other U.S. sources	2,435	2,674	2,871	9.8	7.4
Foreign sources	1,031	1,046	1,037	1.5	−.9
RESEARCH ASSISTANTSHIPS, total	27,171	26,875	26,660	−1.1	−.8
U.S. Government	18,494	17,917	17,550	−3.1	−2.0
Other U.S. sources	8,635	8,912	9,063	3.2	1.7
Foreign sources	42	46	47	9.5	2.2
U.S. citizens	20,490	19,633	18,762	−4.2	−4.4
U.S. Government	14,134	13,201	12,439	−6.6	−5.8
Other U.S. sources	6,356	6,432	6,321	1.2	−1.7
Foreign sources	----	----	2	----	----
Foreign students	6,681	7,242	7,898	8.4	9.1
U.S. Government	4,360	4,716	5,111	8.2	8.4
Other U.S. sources	2,279	2,480	2,742	8.8	10.6
Foreign sources	42	46	45	9.5	−2.2
TEACHING ASSISTANTSHIPS, total	26,984	28,338	29,356	5.0	3.6
U.S. Government	284	220	288	−22.5	30.9
Other U.S. sources	26,700	28,118	29,068	5.3	3.4
Foreign sources	----	----	----	----	----
U.S. citizens	22,551	23,171	23,497	2.7	1.4
U.S. Government	231	173	215	−25.1	24.3
Other U.S. sources	22,320	22,998	23,282	3.0	1.2
Foreign sources	----	----	----	----	----
Foreign students	4,433	5,167	5,859	16.6	13.4
U.S. Government	53	47	73	−11.3	55.3
Other U.S. sources	4,380	5,120	5,786	16.9	13.0
Foreign sources	----	----	----	----	----
OTHER SUPPORT, total	25,928	27,485	30,680	6.0	11.6
U.S. Government	2,439	2,270	2,568	−6.9	13.1
Other U.S. sources	22,702	24,666	27,368	8.7	11.0
Foreign sources	787	549	744	−30.2	35.5
U.S. citizens	21,199	22,069	24,384	4.1	10.5
U.S. Government	2,204	2,044	2,341	−7.3	14.5
Other U.S. sources	18,995	20,025	22,042	5.4	10.1
Foreign sources	----	----	1	----	----
Foreign students	4,729	5,416	6,296	14.5	16.2
U.S. Government	235	226	227	−3.8	.4
Other U.S. sources	3,707	4,641	5,326	25.2	14.8
Foreign sources	787	549	743	−30.2	35.3

Table C–15b.—*Full-time graduate students in 566 engineering doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change 1967–68	Percent change 1968–69
TOTAL	27,591	27,336	27,640	−0.9	9.1
U.S. Government	12,383	11,691	11,076	−5.6	−5.3
Other U.S. sources	14,423	14,995	15,738	4.0	5.0
Foreign sources	785	650	826	−17.2	27.1
U.S. citizens	20,191	18,805	17,886	−6.9	−4.9
U.S. Government	10,254	9,269	8,375	−9.6	−9.6
Other U.S. sources	9,929	9,531	9,507	−4.0	−.3
Foreign sources	8	5	4	(a)	(a)
Foreign students	7,400	8,531	9,754	15.3	14.3
U.S. Government	2,129	2,422	2,701	13.8	11.5
Other U.S. sources	4,494	5,464	6,231	21.6	14.0
Foreign sources	777	645	822	−17.0	27.4
FELLOWSHIPS AND TRAINEESHIPS, total	8,539	8,043	7,204	−5.8	−10.4
U.S. Government	5,921	5,390	4,501	−9.0	−16.5
Other U.S. sources	2,258	2,304	2,351	2.0	2.0
Foreign sources	360	349	352	−3.1	.9
U.S. citizens	7,443	6,891	5,955	−7.4	−13.6
U.S. Government	5,790	5,231	4,332	−9.7	−17.2
Other U.S. sources	1,645	1,655	1,619	.6	−2.2
Foreign sources	8	5	4	(a)	(a)
Foreign students	1,096	1,152	1,249	5.1	8.4
U.S. Government	131	159	169	21.4	6.3
Other U.S. sources	613	649	732	5.9	12.8
Foreign sources	352	344	348	−2.3	1.2
RESEARCH ASSISTANTSHIPS, total	7,961	8,052	8,031	1.1	−.3
U.S. Government	5,322	5,284	5,281	−.7	−.1
Other U.S. sources	2,634	2,759	2,738	4.7	−.8
Foreign sources	5	9	12	(a)	(a)
U.S. citizens	4,967	4,637	4,265	−6.6	−8.0
U.S. Government	3,412	3,122	2,866	−8.5	−8.2
Other U.S. sources	1,555	1,515	1,399	−2.6	−7.7
Foreign sources					
Foreign students	2,994	3,415	3,766	14.1	10.3
U.S. Government	1,910	2,162	2,415	13.2	11.7
Other U.S. sources	1,079	1,244	1,339	15.3	7.6
Foreign sources	5	9	12	(a)	(a)
TEACHING ASSISTANTSHIPS, total	3,504	3,608	3,808	3.0	5.5
U.S. Government	61	37	71	−39.3	91.9
Other U.S. sources	3,443	3,571	3,737	3.7	4.6
Foreign sources					
U.S. citizens	2,378	2,254	2,188	−5.2	−2.9
U.S. Government	38	24	29	−36.8	(a)
Other U.S. sources	2,340	2,230	2,159	−4.7	−3.2
Foreign sources					
Foreign students	1,126	1,354	1,620	20.2	19.6
U.S. Government	23	13	42	(a)	(a)
Other U.S. sources	1,103	1,341	1,578	21.6	17.7
Foreign sources					
OTHER SUPPORT, total	7,587	7,633	8,597	.6	12.6
U.S. Government	1,079	980	1,223	−9.2	24.8
Other U.S. sources	6,088	6,361	6,912	4.5	8.7
Foreign sources	420	292	462	−30.5	58.2
U.S. citizens	5,403	5,023	5,478	−7.0	9.1
U.S. Government	1,014	892	1,148	−12.0	28.7
Other U.S. sources	4,389	4,131	4,330	−5.9	4.8
Foreign sources					
Foreign students	2,184	2,610	3,119	19.5	19.5
U.S. Government	65	88	75	35.4	−14.8
Other U.S. sources	1,699	2,230	2,582	31.3	15.8
Foreign sources	420	292	462	−30.5	58.2

[a] Percent change was not shown when base was less than 25.

Table C–15c.—*Full-time graduate students in 452 physical science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change 1967–68	Percent change 1968–69
TOTAL	28,796	29,262	28,267	1.6	−3.4
U.S. Government	14,171	13,672	12,458	−3.5	−8.9
Other U.S. sources	14,363	15,369	15,554	7.0	1.2
Foreign sources	262	221	255	−15.6	15.4
U.S. citizens	24,436	24,490	22,919	.2	−6.4
U.S. Government	12,665	12,104	10,719	−4.4	−11.4
Other U.S. sources	11,762	12,380	12,185	5.3	−1.6
Foreign sources	9	6	15	(a)	(a)
Foreign students	4,360	4,772	5,348	9.4	12.1
U.S. Government	1,506	1,568	1,739	4.1	10.9
Other U.S. sources	2,601	2,989	3,369	14.9	12.7
Foreign sources	253	215	240	−15.0	11.6
FELLOWSHIPS AND TRAINEESHIPS, total	7,856	7,721	6,641	−1.7	−14.0
U.S. Government	5,880	5,641	4,590	−4.1	−18.6
Other U.S. sources	1,798	1,914	1,874	6.5	−2.1
Foreign sources	178	166	177	−6.7	6.6
U.S. citizens	7,203	7,012	5,906	−2.7	−15.8
U.S. Government	5,802	5,578	4,535	−3.9	−18.7
Other U.S. sources	1,392	1,428	1,357	2.6	−5.0
Foreign sources	9	6	14	(a)	(a)
Foreign students	653	709	735	8.6	3.7
U.S. Government	78	63	55	−19.2	12.7
Other U.S. sources	406	486	517	19.7	6.4
Foreign sources	169	160	163	−5.3	1.9
RESEARCH ASSISTANTSHIPS, total	8,985	8,776	8,879	−2.3	1.2
U.S. Government	7,805	7,541	7,452	−3.4	−1.2
Other U.S. sources	1,176	1,224	1,418	4.1	15.8
Foreign sources	4	11	9	(a)	(a)
U.S. citizens	7,349	7,090	6,907	−3.5	−2.6
U.S. Government	6,408	6,080	5,811	−5.1	−4.4
Other U.S. sources	941	1,010	1,096	7.3	8.5
Foreign sources					
Foreign students	1,636	1,686	1,972	3.1	17.0
U.S. Government	1,397	1,461	1,641	4.6	12.3
Other U.S. sources	235	214	322	−8.9	50.5
Foreign sources	4	11	9	(a)	(a)
TEACHING ASSISTANTSHIPS, total	9,129	9,587	9,529	5.0	−.6
U.S. Government	97	90	60	−7.2	−33.3
Other U.S. sources	9,032	9,497	9,469	5.1	−.3
Foreign sources					
U.S. citizens	7,503	7,710	7,546	2.8	−2.1
U.S. Government	83	71	48	−14.5	−32.4
Other U.S. sources	7,420	7,639	7,498	3.0	−1.8
Foreign sources					
Foreign students	1,626	1,877	1,983	15.4	5.6
U.S. Government	14	19	12	(a)	(a)
Other U.S. sources	1,612	1,858	1,971	15.3	6.1
Foreign sources					
OTHER SUPPORT, total	2,826	3,178	3,218	12.5	1.3
U.S. Government	389	400	356	2.8	−11.0
Other U.S. sources	2,357	2,734	2,793	16.0	2.2
Foreign sources	80	44	69	−45.0	56.8
U.S. citizens	2,381	2,678	2,560	12.5	−4.4
U.S. Government	372	375	325	.8	−13.3
Other U.S. sources	2,009	2,303	2,234	14.6	−3.0
Foreign sources			1		
Foreign students	445	500	658	12.4	31.6
U.S. Government	17	25	31	(a)	24.0
Other U.S. sources	348	431	559	23.9	29.7
Foreign sources	80	44	68	−45.0	54.5

[a] Percent change was not shown when base figure was less than 25.

Table 15d.—*Full-time graduate students in 176 mathematics doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change	
				1967–68	1968–69
TOTAL	10,600	10,668	10,508	0.6	−1.5
U.S. Government	3,244	3,154	2,896	−2.8	−8.2
Other U.S. sources	7,259	7,415	7,515	2.1	1.3
Foreign sources	97	99	97	2.1	−2.0
U.S. citizens	9,181	9,019	8,619	−1.8	−4.4
U.S. Government	3,014	2,905	2,625	−3.6	−9.6
Other U.S. sources	6,166	6,114	5,990	−.8	−2.0
Foreign sources	1		4	[a]	[a]
Foreign students	1,419	1,649	1,889	16.2	14.6
U.S. Government	230	249	271	8.3	8.8
Other U.S. sources	1,093	1,301	1,525	19.0	17.2
Foreign sources	96	99	93	3.1	−6.1
FELLOWSHIP AND TRAINEESHIPS, total	2,837	2,906	2,543	2.4	−12.5
U.S. Government	2,255	2,222	1,829	−1.5	−17.7
Other U.S. sources	524	617	648	17.7	5.0
Foreign sources	58	67	66	15.5	−1.5
U.S. citizens	2,597	2,615	2,201	.7	−15.8
U.S. Government	2,220	2,204	1,802	−.7	−18.2
Other U.S. sources	376	411	395	9.3	−3.9
Foreign sources	1		4	[a]	[a]
Foreign students	240	291	342	21.3	17.5
U.S. Government	35	18	27	−48.6	[a]
Other U.S. sources	148	206	253	39.2	22.8
Foreign sources	57	67	62	17.5	−7.5
RESEARCH ASSISTANTSHIPS, total	996	919	965	−7.7	5.0
U.S. Government	699	640	687	−8.4	7.3
Other U.S. sources	295	279	278	−5.4	−.4
Foreign sources	2			[a]	
U.S. citizens	761	652	668	−14.3	2.5
U.S. Government	526	437	466	−16.9	6.6
Other U.S. sources	235	215	202	−8.5	−6.0
Foreign sources					
Foreign students	235	267	297	13.6	11.2
U.S. Government	173	203	221	17.3	8.9
Other U.S. sources	60	64	76	6.7	18.8
Foreign sources	2			[a]	
TEACHING ASSISTANTSHIPS, total	4,225	4,410	4,396	4.4	−.3
U.S. Government	36	19	40	−47.2	[a]
Other U.S. sources	4,189	4,391	4,356	4.8	−.8
Foreign sources					
U.S. citizens	3,608	3,710	3,561	2.8	−4.0
U.S. Government	35	13	38	−62.9	[a]
Other U.S. sources	3,573	3,697	3,523	3.5	−4.7
Foreign sources					
Foreign students	617	700	835	13.5	19.3
U.S. Government	1	6	2	[a]	[a]
Other U.S. sources	616	694	833	12.7	20.0
Foreign sources					
OTHER SUPPORT, total	2,542	2,433	2,604	−4.3	7.0
U.S. Government	254	273	340	7.5	24.5
Other U.S. sources	2,251	2,128	2,233	−5.5	4.9
Foreign sources	37	32	31	−13.5	−3.1
U.S. citizens	2,215	2,042	2,189	−7.8	7.2
U.S. Government	233	251	319	7.7	27.1
Other U.S. sources	1,982	1,791	1,870	−9.6	4.4
Foreign sources					
Foreign students	327	391	415	19.6	6.1
U.S. Government	21	22	21	[a]	[a]
Other U.S. sources	269	337	363	25.3	7.7
Foreign sources	37	32	31	−13.5	−3.1

[a] Percent change was not shown when base figure was less than 25.

Table C–15e.—*Full-time graduate students in 619 life science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change	
				1967–68	1968–69
TOTAL	20,377	21,067	21,486	3.4	2.0
U.S. Government	9,337	9,452	8,978	1.2	−5.0
Other U.S. sources	10,704	11,343	12,251	6.0	8.0
Foreign sources	336	272	257	−19.0	−5.5
U.S. citizens	17,365	17,933	18,236	3.3	1.7
U.S. Government	8,361	8,484	8,078	1.5	−4.8
Other U.S. sources	8,999	9,444	10,152	4.9	7.5
Foreign sources	5	5	6	[a]	[a]
Foreign students	3,012	3,134	3,250	4.1	3.7
U.S. Government	976	968	900	−.8	−7.0
Other U.S. sources	1,705	1,899	2,099	11.4	10.5
Foreign sources	331	267	251	−19.3	−6.0
FELLOWSHIPS AND TRAINEESHIPS, total	7,286	7,731	7,629	6.1	−1.3
U.S. Government	5,982	6,320	6,171	5.1	−2.4
Other U.S. sources	1,153	1,257	1,316	9.0	4.7
Foreign sources	151	154	142	2.0	−7.8
U.S. citizens	6,593	6,981	6,892	5.9	−1.3
U.S. Government	5,787	6,120	5,949	5.8	−2.8
Other U.S. sources	801	856	939	6.9	9.7
Foreign sources	5	5	4	[a]	[a]
Foreign students	693	750	737	8.2	−1.7
U.S. Government	195	200	222	2.6	11.0
Other U.S. sources	352	401	377	13.9	−6.0
Foreign sources	146	149	138	2.1	−7.4
RESEARCH ASSISTANTSHIPS, total	5,263	5,152	4,856	−2.1	−5.7
U.S. Government	2,967	2,812	2,490	−5.2	−11.5
Other U.S. sources	2,272	2,315	2,347	1.9	1.4
Foreign sources	24	25	19	[a]	−24.0
U.S. citizens	4,002	3,874	3,620	−3.2	−6.6
U.S. Government	2,281	2,122	1,881	−7.0	−11.4
Other U.S. sources	1,721	1,752	1,737	1.8	−.9
Foreign sources	----------	----------	2	----------	[a]
Foreign students	1,261	1,278	1,236	1.3	−3.3
U.S. Government	686	690	609	.6	−11.7
Other U.S. sources	551	563	610	2.2	8.3
Foreign sources	24	25	17	[a]	−32.0
TEACHING ASSISTANTSHIPS, total	4,315	4,487	4,845	4.0	8.0
U.S. Government	29	29	34	----------	17.2
Other U.S. sources	4,286	4,458	4,811	4.0	7.9
Foreign sources	----------	----------	----------	----------	----------
U.S. citizens	3,866	3,968	4,268	2.6	7.6
U.S. Government	24	24	27	[a]	[a]
Other U.S. sources	3,842	3,944	4,241	2.7	7.5
Foreign sources	----------	----------	----------	----------	----------
Foreign students	449	519	577	15.6	11.2
U.S. Government	5	5	7	[a]	[a]
Other U.S. sources	444	514	570	15.8	10.9
Foreign sources	----------	----------	----------	----------	----------
OTHER SUPPORT, total	3,513	3,697	4,156	5.2	12.4
U.S. Government	359	291	283	−18.9	−2.8
Other U.S. sources	2,993	3,313	3,777	10.7	14.0
Foreign sources	161	93	96	−42.2	3.2
U.S. citizens	2,904	3,110	3,456	7.1	11.1
U.S. Government	269	218	221	−19.0	1.4
Other U.S. sources	2,635	2,892	3,235	9.8	11.9
Foreign sources	----------	----------	----------	----------	----------
Foreign students	609	587	700	−3.6	19.3
U.S. Government	90	73	62	−18.9	−15.1
Other U.S. sources	358	421	542	17.6	28.7
Foreign sources	161	93	96	−42.2	3.2

[a] Percent change was not shown when base was less than 25.

Table C–15f.—*Full-time graduate students in 128 psychology doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change 1967–68	Percent change 1968–69
TOTAL	9,267	10,204	10,790	10.1	5.7
U.S. Government	4,383	4,627	4,766	5.6	3.0
Other U.S. sources	4,866	5,559	5,986	14.2	7.7
Foreign sources	18	18	38	(a)	(a)
U.S. citizens	8,921	9,842	10,332	10.3	5.0
U.S. Government	4,287	4,541	4,670	5.9	2.8
Other U.S. sources	4,633	5,300	5,659	14.4	6.8
Foreign sources	1	1	3	(a)	(a)
Foreign students	346	362	458	4.6	26.5
U.S. Government	96	86	96	10.4	11.6
Other sources	233	259	327	11.2	26.3
Foreign sources	17	17	35	(a)	(a)
FELLOWSHIPS AND TRAINEESHIPS, total	3,862	4,196	4,415	8.6	5.2
U.S. Government	3,308	3,534	3,686	6.8	4.3
Other U.S. sources	541	649	699	20.0	7.7
Foreign sources	13	13	30	(a)	(a)
U.S. citizens	3,765	4,106	4,313	9.1	5.0
U.S. Government	3,287	3,516	3,668	7.0	4.3
Other U.S. sources	477	589	642	23.5	9.0
Foreign sources	1	1	3	(a)	(a)
Foreign students	97	90	102	−7.2	13.3
U.S. Government	21	18	18	(a)	(a)
Other U.S. sources	64	60	57	−6.3	−5.0
Foreign sources	12	12	27	(a)	(a)
RESEARCH ASSISTANTSHIPS, total	1,564	1,549	1,592	−1.0	2.8
U.S. Government	953	945	950	−.8	.5
Other U.S. sources	611	604	641	−1.1	6.1
Foreign sources			1		(a)
U.S. citizens	1,462	1,444	1,469	−1.2	1.7
U.S. Government	882	879	877	−.3	−.2
Other U.S. sources	580	565	592	−2.6	4.8
Foreign sources					
Foreign students	102	105	123	2.9	17.1
U.S. Government	71	66	73	−7.0	10.6
Other U.S. sources	31	39	49	25.8	25.6
Foreign sources			1		(a)
TEACHING ASSISTANTSHIPS, total	1,733	1,963	2,089	13.3	6.4
U.S. Government	9	8	8	(a)	(a)
Other U.S. sources	1,724	1,955	2,081	13.4	6.4
Foreign sources					
U.S. citizens	1,655	1,881	1,977	13.7	5.1
U.S. Government	8	8	8	(a)	(a)
Other U.S. sources	1,647	1,873	1,969	13.7	5.1
Foreign sources					
Foreign students	78	82	112	5.1	36.6
U.S. Government	1			(a)	
Other U.S. sources	77	82	112	6.5	36.6
Foreign sources					
OTHER SUPPORT, total	2,108	2,496	2,694	18.4	7.9
U.S. Government	113	140	122	23.9	−12.9
Other U.S. sources	1,990	2,351	2,565	18.1	9.1
Foreign sources	5	5	7	(a)	(a)
U.S. citizens	2,039	2,411	2,573	18.2	6.7
U.S. Government	110	138	117	25.5	−15.2
Other U.S. sources	1,929	2,273	2,456	17.8	8.1
Foreign sources					
Foreign students	69	85	121	23.2	42.4
U.S. Government	3	2	5	(a)	(a)
Other U.S. sources	61	78	109	27.9	39.7
Foreign sources	5	5	7	(a)	(a)

[a] Percent change was not shown when base figure was less than 25.

Table C–15g.—*Full-time graduate students in 397 social science doctorate departments, by type and source of support and citizenship, 1967–68 and 1968–69*

Type and source of support and citizenship	1967	1968	1969	Percent change 1967–68	Percent change 1968–69
TOTAL	21,736	23,124	24,620	6.4	6.5
U.S. Government	5,661	5,806	5,380	2.6	−7.3
Other U.S. sources	15,679	16,911	18,853	7.9	11.5
Foreign sources	396	407	387	2.8	−4.9
U.S. citizens	18,304	19,353	20,722	5.7	7.1
U.S. Government	5,290	5,436	5,040	2.8	−7.3
Other U.S. sources	13,004	13,908	15,679	7.0	12.7
Foreign sources	10	9	3	(a)	(a)
Foreign students	3,432	3,771	3,898	9.9	3.4
U.S. Government	371	370	340	−.3	−8.1
Other U.S. sources	2,675	3,003	3,174	12.3	5.7
Foreign sources	386	398	384	3.1	−3.5
FELLOWSHIPS AND TRAINEESHIPS, total	7,904	8,366	8,183	5.8	−2.2
U.S. Government	4,616	4,888	4,371	5.9	−10.6
Other U.S. sources	2,983	3,155	3,510	5.8	11.3
Foreign sources	305	323	302	5.9	−6.5
U.S. citizens	6,55[illegible]	6,964	6,804	6.2	−2.3
U.S. Government	4,416	4,672	4,226	5.8	−9.5
Other U.S. sources	2,131	2,283	2,575	7.1	12.8
Foreign sources	10	9	3	(a)	(a)
Foreign students	1,347	1,402	1,379	4.1	−1.6
U.S. Government	200	216	145	8.0	−32.9
Other U.S. sources	852	872	935	2.3	7.2
Foreign sources	295	314	299	6.4	−4.8
RESEARCH ASSISTANTSHIPS, total	2,402	2,427	2,337	1.0	−3.7
U.S. Government	748	695	690	−7.1	−.7
Other U.S. sources	1,647	1,731	1,641	5.1	−5.2
Foreign sources	7	1	6	(a)	(a)
U.S. citizens	1,949	1,936	1,833	−.7	−5.3
U.S. Government	625	561	538	−10.2	−4.1
Other U.S. sources	1,324	1,375	1,295	3.9	−5.8
Foreign sources					
Foreign students	453	491	504	8.4	2.6
U.S. Government	123	134	152	8.9	13.4
Other U.S. sources	323	356	346	10.2	−2.8
Foreign sources	7	1	6	(a)	(a)
TEACHING ASSISTANTSHIPS, total	4,078	4,283	4,689	5.0	9.5
U.S. Government	52	37	75	−28.8	102.7
Other U.S. sources	4,026	4,246	4,614	5.5	8.7
Foreign sources					
U.S. citizens	3,541	3,648	3,957	3.0	8.5
U.S. Government	43	33	65	−23.3	97.0
Other U.S. sources	3,498	3,615	3,892	3.3	7.7
Foreign sources					
Foreign students	537	635	732	18.2	15.3
U.S. Government	9	4	10	(a)	(a)
Other U.S. sources	528	631	722	19.5	14.4
Foreign sources					
OTHER SUPPORT, total	7,352	8,048	9,411	9.5	16.9
U.S. Government	245	186	244	−24.1	31.2
Other U.S. sources	7,023	7,779	9,088	10.8	16.8
Foreign sources	84	83	79	−1.2	4.8
U.S. citizens	6,257	6,805	8,128	8.8	19.4
U.S. Government	206	170	211	−17.5	24.1
Other U.S. sources	6,051	6,635	7,917	9.7	19.3
Foreign sources					
Foreign students	1,095	1,243	1,283	13.5	3.2
U.S. Government	39	16	33	−59.0	(a)
Other U.S. sources	972	1,144	1,171	17.7	2.4
Foreign sources	84	83	79	−1.2	−4.8

[a] Percent change was not shown when base figure was less than 25.

Table C–16.—*Full-time faculty in doctorate departments, by field of science, 1969*

Area and field of science	Total faculty		Graduate faculty	
	Number	Percent distribution	Number	Percent of total
TOTAL	54,549	100.0	45,657	83.8
Engineering	11,562	21.2	9,665	83.6
Aeronautical	542	1.0	461	85.1
Agricultural	379	.7	260	68.6
Chemical	996	1.8	919	92.3
Civil	1,736	3.2	1,450	83.5
Electrical	2,699	4.9	2,271	84.1
Engineering science	680	1.2	590	86.8
Industrial	685	1.3	548	80.0
Mechanical	2,076	3.8	1,633	78.7
Metallurgical and materials	612	1.1	566	92.5
Mining	101	.2	78	77.2
Nuclear	227	.4	222	97.8
Petroleum	66	.1	61	92.4
Other engineering	763	1.4	606	79.4
Physical sciences	10,583	19.4	9,414	89.0
Astronomy	211	.4	198	93.8
Atmospheric sciences	233	.4	202	86.7
Chemistry	4,077	7.5	3,682	90.3
Geosciences	1,285	2.4	1,175	91.4
Oceanography	416	.8	348	83.7
Physics	4,361	8.0	3,809	87.3
Mathematical sciences	5,667	10.4	4,471	78.9
Applied mathematics	264	.5	233	88.2
Mathematics	4,963	9.1	3,834	77.2
Statistics	440	.8	404	91.8
Life sciences	14,075	25.8	11,497	81.7
Agriculture	3,771	6.9	2,797	74.2
Biochemistry	1,527	2.8	1,318	86.3
Biology	2,514	4.6	2,225	88.5
Botany	1,211	2.2	1,025	84.6
Microbiology	828	1.5	725	87.6
Pharmacology	820	1.5	659	80.4
Physiology	822	1.5	654	79.6
Zoology	1,191	2.2	1,032	86.6
Other life sciences	1,391	2.6	1,062	76.3
Psychology	3,317	6.1	2,902	87.5
Social sciences	9,345	17.1	7,738	82.8
Agricultural economics	463	.8	350	75.6
Anthropology	803	1.5	704	87.7
Economics (except agricultural)	2,460	4.5	1,956	79.5
Geography	511	.9	444	86.9
History and philosophy of science	276	.5	250	90.6
Linguistics	581	1.1	458	78.8
Political science	2,273	4.2	1,972	86.8
Sociology	1,751	3.2	1,416	80.9
Sociology and anthropology	227	.4	188	82.8

Table C–17.—*Full-time graduate students in doctorate departments, compared with full-time graduate faculty, by area of science, 1969*

Area of science	Full-time graduate students		Full-time graduate faculty		Number of students per faculty member
	Number	Percent distribution	Number	Percent distribution	
Total	141,199	100.0	45,687	100.0	3.1
Engineering	30,820	21.8	9,665	21.2	3.2
Physical sciences	30,175	21.4	9,414	20.6	3.2
Mathematical sciences	11,727	8.3	4,471	9.8	2.6
Life sciences	27,588	19.5	11,497	25.2	2.4
Psychology	11,918	8.4	2,902	6.4	4.1
Social sciences	28,971	20.5	7,738	16.9	3.7

Table C–18.—*Full-time graduate faculty in doctorate departments, 1968, compared with number of Ph.D. degrees granted, academic year 1968–69, by area of science*

Area of science	Full-time graduate faculty, 1968	Ph.D. degrees granted, academic year 1968–69	Number of graduate faculty per Ph.D. degree
Total	42,674	14,998	2.8
Engineering	9,034	3,514	2.6
Physical sciences	8,874	3,704	2.4
Mathematical sciences	4,268	1,071	4.0
Life sciences	10,681	3,154	3.4
Psychology	2,707	1,398	1.9
Social sciences	7,110	2,157	3.3

Source: Departmental Summaries from 2,894 doctorate departments, as shown in appendix E.

Table C–19.—*Postdoctorals in doctorate departments, by field of science, 1969*

Area and field of science	Total postdoctorals		Recent postdoctorals	
	Number	Percent distribution	Number	Percent of total
Total	8,517	100.0	5,746	67.5
Engineering	781	9.2	504	64.5
Aeronautical	43	.5	33	76.7
Agricultural	11	.1	7	63.6
Chemical	114	1.3	84	73.7
Civil	80	.9	47	58.8
Electrical	99	1.2	64	64.6
Engineering science	74	.9	31	41.9
Industrial	20	.2	11	55.0
Mechanical	79	.9	51	64.6
Metallurgical and materials	122	1.4	89	73.0
Mining	7	.1	4	57.1
Nuclear	25	.3	10	40.0
Petroleum	4	(a)	3	75.0
Other engineering	103	1.2	70	68.0
Physical sciences	3,786	44.4	2,923	77.2
Astronomy	69	.8	43	62.3
Atmospheric sciences	43	.5	24	55.8
Chemistry	2,236	26.3	1,851	82.8
Geosciences	174	2.0	109	62.6
Oceanography	61	.7	33	54.1
Physics	1,203	14.1	863	71.7
Mathematical sciences	247	2.9	147	59.5
Applied mathematics	26	.3	11	42.3
Mathematics	190	2.2	111	58.4
Statistics	31	.4	25	80.6
Life sciences	3,214	37.7	1,936	60.2
Agriculture	296	3.5	196	66.2
Biochemistry	932	10.9	627	67.3
Biology	766	9.0	382	49.9
Botany	160	1.9	91	56.9
Microbiology	251	2.9	157	62.5
Pharmacology	220	2.6	140	63.6
Physiology	214	2.5	114	53.3
Zoology	160	1.9	89	55.6
Other life sciences	215	2.5	140	65.1
Psychology	231	2.7	139	60.2
Social sciences	258	3.0	97	37.6
Agricultural economics	9	.1	3	33.3
Anthropology	27	.3	13	48.1
Economics (except agricultural)	76	.9	27	35.5
Geography	13	.2	7	53.8
History and philosophy of science	14	.2	7	50.0
Linguistics	34	.4	11	32.4
Political science	29	.3	9	31.0
Sociology	54	.6	19	35.2
Sociology and anthropology	2	(a)	1	50.0

(a) Less than 0.05 percent.

Table C–20.—*Full-time graduate students in doctorate departments, compared with postdoctorals, by area of science, 1969*

Area of science	Full-time graduate students		Postdoctorals		Number of students per postdoctoral
	Number	Percent distribution	Number	Percent distribution	
Total	141,199	100.0	8,517	100.0	16.6
Engineering	30,820	21.8	781	9.2	39.5
Physical sciences	30,175	21.4	3,786	44.5	8.0
Mathematical sciences	11,727	8.3	247	2.9	47.5
Life sciences	27,588	19.5	3,214	37.7	8.6
Psychology	11,918	8.4	231	2.7	51.6
Social sciences	28,971	20.5	258	3.0	112.3

Table C–21.—*Postdoctorals in doctorate departments, 1968, compared with number of Ph.D. degrees granted, academic year 1968–69, by area of science*

Area of science	Post-doctorals, 1968	Ph.D. degrees granted, academic year 1968–69	Number of Ph.D.'s per post-doctoral
Total	7,720	14,998	1.9
Engineering	690	3,514	5.1
Physical sciences	3,615	3,704	1.0
Mathematical sciences	236	1,071	4.5
Life sciences	2,743	3,154	1.1
Psychology	214	1,398	6.5
Social sciences	222	2,157	9.7

Source: Departmental Summaries from 2,894 doctorate departments, as shown in appendix E

Table C–22.—*Full-time graduate faculty in doctorate departments, compared with number of postdoctorals, by area of science, 1969*

Area of science	Full-time graduate faculty		Postdoctorals		Number of graduate faculty per post-doctoral
	Number	Percent distribution	Number	Percent distribution	
Total	45,687	100.0	8,517	100.0	5.4
Engineering	9,665	21.2	781	9.2	12.4
Physical sciences	9,414	20.6	3,786	44.5	2.5
Mathematical sciences	4,471	9.8	247	2.9	18.1
Life sciences	11,497	25.2	3,214	37.7	3.6
Psychology	2,902	6.4	231	2.7	12.6
Social sciences	7,738	16.9	258	3.0	30.0

74 13

APPENDIX D

Instructions and Consolidated Departmental Data Sheets

(NSF Form 345)—Doctorate Departments

TABLE		Page
D–1.	All sciences, 2,894 departments	69
D–2.	Engineering, 665 departments	70
D–3.	Physical sciences, 509 departments	71
D–4.	Mathematical sciences, 203 departments	72
D–5.	Life sciences, 874 departments	73
D–6.	Psychology, 141 departments	74
D–7.	Social sciences, 502 departments	75

Instructions for Completing the Departmental Data Sheet

For further information on the Graduate Traineeship Program, refer to the Announcement (E 69–G–6). Completed copies of the Departmental Data Sheet should be forwarded to the designated Coordinating Official at the institution. Copies of the form should be prepared in sufficient numbers and in time so that the institution can complete its review and forward five copies (reproductions of the original, not carbons) of each sheet being submitted, to reach the National Science Foundation *not later than October 24, 1969.*

Item 5—Give the numbers of degrees *conferred* between 7/1/68 and 6/30/69. *Under A* insert the number of bachelor's degrees (include 5-year professional degrees). *Under B* insert the number of master's degrees (excluding degrees in the teaching of science, *e. g.* M.A.T.). *Under C* insert the number of master's degrees in the teaching of science (*e.g.*, M.A.T.). *Under D* insert the number of doctoral degrees. Degrees awarded *jointly* by two or more departments should be recorded on one departmental data sheet only.

Item 6.—A *full-time* graduate student is defined here as a *bona fide* graduate student (not a regular staff member, *e.g.*, an instructor) who is engaged entirely in training activities in his field of science; these activities may embrace any appropriate combination of study, teaching, and research. (Some institutions use the phrase "geographical full-time student" to describe such students.)

A *first-year* graduate student is *defined* for this program as one who will have completed *less than one normal year* of graduate study as of the beginning of the Fall term of 1969. All other students should be considered beyond first level.

Insert in each appropriate box the number of students who are simultaneously (a) full-time graduate students (defined above), (b) enrolled in an advanced degree program, and (c) receiving a total stipend of $1,200 or more—not counting tuition and excluding personal, family and loan sources—during the 1969–70 academic year.

All students meeting criteria (a) and (b), but not (c), should be counted under "Self, Loans and Family." Full-time graduate students working for an advanced degree who are employees of another organization, on leave of absence, and whose major support is provided by their employer, should be listed by type of employer (*e.g.*, industry). If a graduate student receives stipend support from more than one source, choose the *major* source. For cases of two or more equivalent sources choose one *major* source category so that *using only whole numbers* the departmental data sheet will give a reasonably accurate *average* support picture for the department.

Care should be used in listing support sources accurately so that students (particularly research assistants) supported under U.S. Government grants are listed under the appropriate U.S. Government agency (*e.g.*, students supported on an AEC research grant should appear under AEC and students supported under an NSF Institutional Grant should appear under NSF, not under "This Institution").

Each row total given under *ALL SOURCES* is to be split into two components, *First Year* and *Beyond First.* Thus *every* full-time graduate student enrolled for an advanced degree is counted only once by major source of support and once again in a separate breakout by level (First Year or Beyond First) of study.

Item 8—These students are often called "special" or "nondegree" students. "Special" or "nondegree" students are those students possessing an undergraduate degree who are enrolled in one or more graduate courses in the department Fall 1968, but who are not enrolled for an advanced degree (they have not been admitted to graduate school).

Item 9—The numbers of graduate students who are working for advanced degrees, but who are not pursuing graduate work full-time are enumerated under the four entries for *part-time.* Do not include "special" students who are *not* enrolled for advanced degrees (given in item 8) or students who have left your institution but are completing their theses while engaged in other activities.

Item 10—For items A, B, and C, only faculty of academic rank of instructor or above, who are significantly involved (*i.e.*, teaching one or more courses or seminars and/or directing the research of one or more students) in the graduate and/or undergraduate academic program of the department as of the Fall 1969 should be counted, including faculty on sabbatical leave who are expected to return. Visiting professors should not be counted. Do not count postdoctorals or research associates: they are counted under item 11. *Under A*, give the number of full-time faculty who are staff (including the department head) of academic rank instructor or above with a full-time appointment in the department and whose major responsibilities are with the academic programs of the department. (A faculty member should be counted as full-time in only one department.) *Under B*, give the number of faculty included *under A* who do not teach any regularly scheduled courses (research professors, research associates of professorial academic rank, etc.). *Under C*, give the number of faculty included *under A*, who are significantly involved in the *graduate* academic program of the department (*i.e.*, teaching one or more *graduate* courses or seminars and/or directing the research of one or more *graduate* students).

Under D, give the number of *part-time* graduate faculty (part-time in this department), defined to include all faculty who are significantly involved in the *graduate* academic program (see C, above) but whose *major responsibilities* or activities are outside the department. Part-time will usually include senior university administrators (deans, etc.) affiliate or adjunct professors (from other departments or outside the university), professors emeriti, experiment laboratory or extension service staff, museum staff, etc.

Item 11—*Postdoctorals or Research Associates* include individuals with a doctorate (including foreign degrees that are equivalent to U.S. doctorates) who devote full-time to research activities or study in the department under temporary appointments carrying no academic rank (instructor or above). Such appointments are usually for a *specific time period.* They may contribute to the academic program through seminars, lectures, or working with graduate students. Their postdoctoral activities have an element of additional training for them.

Under A, give the total number of Postdoctorals and/or Research Associates as defined above, as of the Fall of 1969. Of this number enter *under B* the number who are teaching one or more regularly scheduled courses; *under C*, give the number of Postdoctorals and/or Research Associates (defined above) who received their doctorates in 1965 or later.

Item 12—Give the number of NSF Graduate Traineeships in each category that your department could effectively use. Avoid unrealistic and inflated numbers, taking full cognizance of all other means of available support. Only U.S. citizens enrolled in an advanced degree program may be appointed. Under a new grant for 1970–71 an institution must appoint most of its 9- or 12-month Trainees at the first-year level.

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 2894 Doctoral Science Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 99,009 (1); MS 31,751 (2); MAT, 1,458 (3): Ph.D. 14,998 (4)
   (also BA, etc.) (also MA, etc. (Ex. MAT, etc.)) (MAT, etc.) (PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States	500	44	353	6,706	8,946	1,043	1,318	7,255	1,752	27,917	5,224	1,637	1,419	-------	228	8,508	37	36,462	10,527	25,935
	2 Foreign	-------	12	17	47	140	13	35	-------	526	790	1,967	878	244	-------	161	3,250	1,232	5,272	1,960	3,312
Graduate research assistantships.	3 United States.	1,806	731	2,357	79	2,199	361	833	3,642	1,927	13,935	5,932	609	770	-------	218	7,529	2	21,466	4,423	17,043
	4 Foreign	589	218	1,168	15	766	72	409	1,583	891	5,711	2,519	263	372	-------	85	3,239	55	9,005	1,916	7,089
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	21	34	-------	102	95	252	26,121	61	9	-------	42	26,233	-------	26,485	9,143	17,342
	6 Foreign	-------	-------	-------	-------	8	1	-------	20	46	75	6,403	17	-------	-------	11	6,431	-------	6,506	2,142	4,364
Other than above	7 United States.	34	82	1,057	7	101	38	85	337	915	2,656	1,965	260	1,621	21,175	1,076	26,097	1	28,754	12,491	16,263
	8 Foreign	11	4	11	4	8	2	3	42	199	284	340	111	133	5,132	331	6,047	918	7,249	3,769	3,480
Total—United States	9 United States.	2,340	857	3,767	6,792	11,267	1,476	2,236	11,336	4,689	44,760	39,242	2,567	3,819	21,175	1,564	68,367	40	113,167	36,584	76,583
Total—Foreign	10 Foreign	600	234	1,196	66	922	88	447	1,645	1,662	6,860	11,229	1,269	749	5,132	588	18,967	2,205	28,032	9,787	18,245
Totals	11	2,940	1,091	4,963	6,858	12,189	1,564	2,683	12,981	6,351	51,620	50,471	3,836	4,568	26,307	2,152	87,334	2,245	141,199	46,371	94,828

7. The number of students included in the above table (item 6) who are:

(A) supported with full tuition from this institution 36,906 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.

(B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 10,157 (2)

(C) receiving support from *more than one source*, exclusive of self, loans, and family 9,039 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 8,922

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS				FOREIGN				TOTAL
1st year		Beyond 1st		1st year		Beyond 1st		Part-time
16,911	(1)	23,228	(2)	1,372	(3)	2,135	(4)	43,646

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY						PART-TIME	
Total		Nonteaching		Graduate		Graduate	
A		B		C		D	
54,549	(1)	2,700	(2)	45,687	(3)	8,569	(4)

11. Number of Postdoctorals/Research Associates:

Total		Teaching		Recent doctorals	
A		B		C	
8,517	(1)	699	(2)	5,746	(3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 665 Engineering Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 25,987 (1); MS 12,194 (2); MAT 55 (3); Ph.D. 3,514 (4)
   (also BA, etc.) (also MA, etc. (Ex. MAT, etc.)) (MAT, etc.) (PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States.	331	2	154	1,016	649	48	536	1,651	438	4,825	611	237	910	-------	27	1,785	6	6,616	2,435	4,181
	2 Foreign	-------	-------	11	11	27	1	29	-------	106	185	530	158	132	-------	33	853	418	1,456	650	806
Graduate research assistentships.	3 United States.	302	25	1,052	15	183	65	377	649	557	3,225	1,141	89	356	-------	14	1,600	-------	4,825	1,250	3,575
	4 Foreign	190	22	798	7	150	25	299	709	472	2,672	1,186	97	243	-------	12	1,538	13	4,223	1,034	3,189
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	1	4	-------	6	18	29	2,413	8	4	-------	2	2,427	-------	2,456	918	1,538
	6 Foreign	-------	-------	-------	-------	-------	-------	-------	6	36	42	1,708	5	-------	-------	2	1,715	-------	1,757	595	1,164
Other than above	7 United States.	22	12	711	2	15	8	64	22	418	1,274	325	33	1,177	3,050	148	4,733	-------	6,007	3,013	2,992
	8 Foreign	-------	-------	6	2	-------	-------	3	12	59	82	111	14	108	2,432	165	2,830	568	3,480	2,105	1,375
Total—United States	9 United States.	655	39	1,917	1,033	848	125	977	2,328	1,431	9,353	4,490	367	2,447	3,050	191	10,545	6	19,904	7,616	12,288
Total—Foreign	10 Foreign	190	22	815	20	177	26	331	727	673	2,981	3,535	274	483	2,432	212	6,936	999	10,916	4,384	6,532
Totals	11	845	61	2,732	1,053	1,025	151	1,308	3,055	2,104	12,334	8,025	641	2,930	5,482	403	17,481	1,005	30,820	12,000	18,820

7. The number of students included in the above table (item 6) who are:
   (A) supported with full tuition from this institution 6,578 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.
   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 1,336 (2)
   (C) receiving support from *more than one source*, exclusive of self, loans, and family 1,978 (2)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 3,205

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS		FOREIGN		TOTAL
1st year	Beyond 1st	1st year	Beyond 1st	Part-time
9,817 (1)	9,765 (2)	940 (3)	1,225 (4)	21,747

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY			PART-TIM
Total	Nonteaching	Graduate	Graduate
A	B	C	D
11,562 (1)	437 (2)	9,665 (3)	1,528 (4)

11. Number of Postdoctorals/Research Associates:

Total	Teaching	Recent doctorals
A	B	C
781 (1)	87 (2)	504 (3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 509 Physical Sciences Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 9,256 (1); MS 3,948 (2); MAT 326 (3); Ph.D. 3,704 (4)
   (also BA, etc.) (also MA, etc. (Ex. MAT, etc.)) (MAT, etc.) (PhD, DSc. etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States.	106	1	88	1,311	725	36	435	1,993	116	4,811	897	214	346	-------	12	1,469	14	6,294	1,469	4,825
	2 Foreign	-------	1	2	7	8	1	3	-------	40	62	371	98	67	-------	15	551	189	802	268	534
Graduate research assistantships.	3 United States.	1,359	48	941	30	710	18	373	1,994	645	6,118	753	232	135	-------	77	1,197	-------	7,315	638	6,677
	4 Foreign	346	10	266	5	226	3	91	570	209	1,726	240	56	30	-------	27	353	10	2,089	250	1,839
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	6	-------	-------	42	4	52	7,910	3	-------	-------	2	7,915	-------	7,967	3,272	4,695
	6 Foreign	-------	-------	-------	-------	1	-------	-------	9	2	12	2,090	2	-------	-------	1	2,093	-------	2,105	796	1,309
Other than above	7 United States.	4	3	138	-------	3	1	8	47	168	372	186	20	124	2,018	149	2,497	1	2,870	1,021	1,849
	8 Foreign	4	-------	3	-------	-------	1	-------	9	17	34	50	18	13	483	55	619	80	733	384	349
Total—United States	9 United States.	1,469	52	1,167	1,341	1,444	55	816	4,076	933	11,353	9,746	469	605	2,018	240	13,078	15	24,446	6,400	18,046
Total—Foreign	10 Foreign	350	11	271	12	235	5	94	588	268	1,834	2,751	174	110	483	98	3,616	279	5,729	1,698	4,031
Totals	11	1,819	63	1,438	1,353	1,679	60	910	4,664	1,201	13,187	12,497	643	715	2,501	338	16,694	294	30,175	8,098	22,077

7. The number of students included in the above table (item 6) who are:

   (A) supported with full tuition from this institution 10,046 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.

   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 2,798 (2)

   (C) receiving support from *more than one source*, exclusive of self, loans, and family 2,465 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 1,240

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS 1st year	U.S. CITIZENS Beyond 1st	FOREIGN 1st year	FOREIGN Beyond 1st	TOTAL Part-time
1,365 (1)	2,867 (2)	113 (3)	176 (4)	4,521

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY Total A	Nonteaching B	Graduate C	PART-TIME Graduate D
10,583 (1)	305 (2)	9,414 (3)	1,071 (4)

11. Number of Postdoctorals/Research Associates:

Total A	Teaching B	Recent doctorals C
3,786 (1)	287 (2)	2,923 (3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 203 Mathematical Sciences Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 8,160 (1); MS 2,991 (2); MAT 602 (3); Ph.D. 1,071 (4)
   (also BA, etc.) (also MA, etc. (Ex. MAT, etc.)) (MAT, etc.) (PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States	4	2	18	501	145	51	158	1,052	35	1,966	324	55	60	-------	10	449	4	2,419	798	1,621
	2 Foreign	-------	-------	1	3	2	1	2	-------	19	28	206	46	12	-------	7	271	76	375	160	215
Graduate research assistantships.	3 United States.	24	6	156	1	24	2	9	305	35	562	225	3	10	-------	5	243	-------	805	135	670
	4 Foreign	11	2	80	1	7	1	6	126	27	261	76	3	1	-------	8	88	-------	349	73	276
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	-------	1	-------	36	3	40	3,828	1	-------	-------	-------	3,829	-------	3,869	1,277	2,592
	6 Foreign	-------	-------	-------	-------	-------	-------	-------	2	-------	2	923	4	-------	-------	-------	927	-------	929	269	660
Other than above	7 United States.	1	2	68	-------	4	-------	13	175	72	335	266	6	113	1,70.	78	2,165	-------	2,500	1,262	1,238
	8 Foreign	-------	1	1	-------	4	-------	-------	12	11	29	38	7	4	338	19	406	46	481	225	256
Total—United States	9 United States.	29	10	242	502	173	54	180	1,568	145	2,903	4,643	65	183	1,702	93	6,686	4	9,593	3,472	6,121
Total—Foreign	10 Foreign	11	3	82	4	13	2	8	140	57	320	1,243	60	17	338	34	1,692	122	2,134	727	1,407
Totals	11	40	13	324	506	186	56	188	1,708	202	3,223	5,886	125	200	2,040	127	8,378	126	11,727	4,199	7,528

7. The number of students included in the above table (item 6) who are:
   (A) supported with full tuition from this institution 3,572 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.
   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 913 (2)
   (C) receiving support from *more than one source*, exclusive of self, loans, and family 1,199 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 1,103

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS		FOREIGN		TOTAL
1st year	Beyond 1st	1st year	Beyond 1st	Part-time
1,318 (1)	2,198 (2)	55 (3)	119 (4)	3,690

10. Number of faculty members:

FULL-TIME DEPARTMENTAL FACULTY				PART-TIME
Total	Nonteaching	Graduate		Graduate
A	B	C		D
5,667 (1)	122 (2)	4,471 (3)		480 (4)

11. Number of Postdoctorals/Research Associates:

Total	Teaching	Recent doctorals
A	B	C
247 (1)	54 (2)	147 (3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 874 Life and Medical Science Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 16,949 (1); MS 4,387 (2); MAT 318 (3); Ph.D. 3,154 (4)
   (also BA, etc. / also MA, etc. (Ex. MAT, etc.) / MAT, etc. / PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States.	59	33	34	1,293	4,340	203	124	1,276	197	7,559	859	255	55	-------	28	1,197	5	8,761	1,987	6,774
	2 Foreign	-------	9	2	[illegible]	84	7	1	-------	177	283	196	183	25	-------	50	454	194	931	279	652
Graduate research assistantships.	3 United States.	111	540	52	24	792	47	48	405	447	2,466	1,835	156	244	-------	64	2,299	2	4,767	1,238	3,529
	4 Foreign	40	143	12	-------	338	21	10	125	111	800	631	64	97	-------	15	807	25	1,632	386	1,246
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	10	10	-------	6	20	46	5,249	16	4	-------	24	5,293	-------	5,339	1,856	3,483
	6 Foreign	-------	-------	-------	-------	7	-------	-------	1	-------	8	735	2	-------	-------	4	741	-------	749	242	507
Other than above	7 United States.	6	38	30	4	39	9	-------	76	61	263	322	29	58	3,519	268	4,196	-------	4,459	2,001	2,458
	8 Foreign	7	3	1	1	4	1	-------	6	65	88	52	35	5	592	48	732	130	950	404	546
Total—United States	9 United States.	176	611	116	1,321	5,181	269	172	1,763	725	10,334	8,265	456	361	3,519	384	12,985	7	23,326	7,082	16,244
Total—Foreign	10 Foreign	47	155	15	4	433	29	11	132	353	1,179	1,614	284	127	592	117	2,734	349	4,262	1,311	2,951
Totals	11	223	766	131	1,325	5,614	298	183	1,895	1,078	11,513	9,879	740	488	4,111	501	15,719	356	27,588	8,393	19,195

7. The number of students included in the above table (item 6) who are:
   (A) supported with full tuition from this institution 7,136 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.
   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 3,225 (2)
   (C) receiving support from *more than one source*, exclusive of self, loans, and family 1,481 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 1,052

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS		FOREIGN		TOTAL
1st year	Beyond 1st	1st year	Beyond 1st	Part-time
847 (1)	2,166 (2)	57 (3)	152 (4)	3,222

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY			PART-TIME
Total	Nonteaching	Graduate	Graduate
A	B	C	D
14,075 (1)	1,454 (2)	11,497 (3)	3,383 (4)

11. Number of Postdoctorals/Research Associates:

Total	Teaching	Recent doctorals
A	B	C
3,214 (1)	1,811 (2)	936 (3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 141 Psychology Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 11,748 (1); MS 2,002 (2); MAT 21 (3); PhD 1,398 (4)
   (also BA, etc. / also MA, etc. (Ex. MAT, etc. / MAT, etc.) / PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States.	-------	-------	29	562	2,002	329	37	334	639	3,932	519	70	9	-------	84	682	3	4,617	1,340	3,277
	2 Foreign	-------	-------	-------	-------	11	-------	-------	-------	10	21	58	7	-------	-------	3	68	32	121	34	87
Graduate research assistantships.	3 United States.	-------	-------	119	1	408	175	13	123	89	928	573	40	15	-------	4	632	-------	1,560	521	1,039
	4 Foreign	1	-------	9	-------	33	9	2	8	18	80	48	2	1	-------	1	52	1	133	37	96
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	4	4	-------	-------	2	10	2,118	-------	-------	-------	5	2,123	-------	2,133	644	1,489
	6 Foreign	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	127	-------	-------	-------	-------	127	-------	127	35	92
Other than above	7 United States.	-------	-------	21	-------	29	13	-------	2	86	151	448	127	38	2,081	249	2,943	-------	3,094	930	2,164
	8 Foreign	-------	-------	-------	-------	-------	-------	-------	-------	5	5	11	6	-------	100	4	121	7	133	51	82
Total—United States	9 United States.	-------	-------	169	563	2,443	521	50	459	816	5,021	3,658	237	62	2,081	342	6,380	3	11,404	3,435	7,969
Total—Foreign	10 Foreign	1	-------	9	-------	44	9	2	8	33	106	244	15	1	100	8	368	40	514	157	357
Totals	11	1	-------	178	563	2,487	530	52	467	849	5,127	3,902	252	63	2,181	350	6,748	43	11,918	3,592	8,326

7. The number of students included in the above table (item 6) who are:
   (A) supported with full tuition from this institution 2,712 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.
   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 815 (2)
   (C) receiving support from *more than one source*, exclusive of self, loans, and family 748 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 705

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS		FOREIGN		TOTAL
1st year	Beyond 1st	1st year	Beyond 1st	Part-time
509 (1)	1,289 (2)	17 (3)	30 (4)	1,845

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY			PART-TIME
Total	Nonteaching	Graduate	Graduate
A	B	C	D
3,317 (1)	64 (2)	2,902 (3)	733 (4)

11. Number of Postdoctorals/Research Associates:

Total	Teaching	Recent doctorals
A	B	C
231 (1)	46 (2)	139 (3)

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970

Departmental Data Sheet

(Note: Before filling out please read the instructions on the reverse)

1. Name and address of Institution: 224 Doctoral Granting Institutions Applying in the 1970 GTP.
2. Department (or unit) covered by this data sheet: 502 Social Sciences Doctoral Departments.
3. Person in Department (or unit) preparing this form: Name _____ Title _____
4. Highest degree offered in the Fall of 1969: (check only one) Masters ☐ (1) Ph. D. ☐ (2)
5. Number of degrees granted 7–1–68 through 6–30–69: BS 26,909 (1); MS 6,229 (2); MAT 136 (3); PhD 2,157 (4)
   (also BA, etc. / also MA, etc. (Ex. MAT, etc.) / MAT, etc. / PhD, DSc, etc.)

6. Major support sources (excluding tuition) of All Full-Time Graduate Students enrolled for Advanced Degrees (M.S. and Ph.D.) in the Fall 1969 (see item 6—instructions)

TYPES OF SUPPORT		U.S. Government (excluding loans)										Other United States (non-U.S. Government)						Foreign sources	All sources		
		AEC	Department of Agriculture	Department of Defense	HEW: NDEA	HEW: PHS (NIH)	HEW: Other HEW	NASA	NSF	Other U.S. Government	U.S. Government subtotal	This Institution and State and local Government	Private nonprofit foundation	Industry	Self, loans, and family	Other	Other U.S., subtotal		Total	First year	Beyond first
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(a–i)	(j)	(k)	(l)	(m)	(n)	(j–n)	(o)	(p)	(q)	(r)
Fellowships and traineeships.	1 United States.	-------	6	30	2,023	1,085	376	28	949	327	4,824	2,014	806	39	-------	67	2,926	5	7,755	2,498	5,257
	2 Foreign	-------	2	1	23	8	3	-------	-------	174	211	606	386	8	-------	53	1,053	323	1,587	569	1,018
Graduate research assistantships.	3 United States.	10	112	37	8	82	54	13	166	154	636	1,405	89	10	-------	54	1,558	-------	2,194	641	1,553
	4 Foreign	1	41	3	2	12	13	1	45	54	172	338	41	-------	-------	22	401	6	579	136	443
Graduate teaching assistantships.	5 United States.	-------	-------	-------	-------	-------	15	-------	12	48	75	4,603	33	1	-------	9	4,646	-------	4,721	1,176	3,545
	6 Foreign	-------	-------	-------	-------	-------	1	-------	2	8	11	820	4	-------	-------	4	828	-------	839	205	634
Other than above	7 United States.	1	27	89	1	11	7	-------	15	110	261	418	45	111	8,805	184	9,563	-------	9,824	4,264	5,560
	8 Foreign	-------	-------	-------	1	-------	-------	-------	3	42	46	78	31	3	1,187	40	1,339	87	1,472	600	872
Total—United States	9 United States.	11	145	156	2,032	1,178	452	41	1,142	639	5,796	8,440	973	161	8,805	314	18,693	5	24,494	8,579	15,915
Total—Foreign	10 Foreign	1	43	4	26	20	17	1	50	278	440	1,842	462	11	1,187	119	3,621	416	4,477	1,510	2,967
Totals	11	12	188	160	2,058	1,198	469	42	1,192	917	6,236	10,282	1,435	172	9,992	433	22,314	421	28,971	10,089	18,882

7. The number of students included in the above table (item 6) who are:

   (A) supported with full tuition from this institution 6,862 (1). Include students in institutions charging no tuition, but not those whose tuition comes from the U.S. Government or a non-institutional source.

   (B) performing some regular *teaching* activity, but who do *not* receive their *major* support from a graduate teaching assistantship 1,069 (2)

   (C) receiving support from *more than one source*, exclusive of self, loans, and family 1,168 (3)

8. Number of "special" students enrolled for graduate course work (full or part-time) in this department who are not enrolled for an advanced degree 1,617

9. Part-time graduate students enrolled for *advanced degrees* Fall 1969 by level of study; do not include "special" students.

U.S. CITIZENS		FOREIGN		TOTAL
1st year	Beyond 1st	1st year	Beyond 1st	Part-time
3,055 (1)	4,943 (2)	190 (3)	433 (4)	8,621

10. Numbers of faculty members:

FULL-TIME DEPARTMENTAL FACULTY			PART-TIME
Total	Nonteaching	Graduate	Graduate
A	B	C	D
9,345 (1)	318 (2)	7,738 (3)	1,374 (4)

11. Number of Postdoctorals/Research Associates:

Total	Teaching	Recent doctorals
A	B	C
258 (1)	44 (2)	97 (3)

APPENDIX E

Consolidated Departmental Summaries

(Selected trend data for doctorate departments requested as part of announcement of NSF graduate traineeships for 1970—E 69–G–6)

TABLE		Page
E–1.	All sciences, 2,894 departments	78
E–2.	Engineering, 665 departments	79
E–3.	Physical sciences, 509 departments	80
E–4.	Mathematical sciences, 203 departments	81
E–5.	Life sciences, 874 departments	82
E–6.	Psychology, 141 departments	83
E–7.	Social sciences, 502 departments	84

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-1.--All sciences, 2,894 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	64,075	70,133	73,768	80,640	89,158	99,009	5-1
MS (also MA, not MAT)	(2)	21,562	24,127	26,952	28,975	31,069	31,751	5-2
MAT, etc.	(3)	863	1,053	1,054	1,365	1,361	1,458	5-3
PhD (also DSc, etc.)	(4)	8,391	9,671	10,542	12,121	13,364	14,998	5-4

4. Enrollment Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full-Time	(1)	133,200	138,283	141,199	6	p	9
Full-Time Students U.S. Citizens: Teaching Assistants	(2)	25,845	26,781	26,485	6	p	5
Full-Time Students U.S. Citizens: Self, Loans and Family	(3)	18,950	20,274	21,175	6	m	7
Total Part-Time	(4)	40,259	41,605	43,646	9-sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	48,354	51,923	54,549	10A
Graduate Faculty	(2)	39,078	42,674	45,687	10C
Postdoctorals	(3)	7,140	7,720	8,517	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E-69-G-6

385

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-2.--Engineering, 665 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	22,502	23,683	23,006	23,211	23,920	25,987	5-1
MS (also MA, not MAT)	(2)	9,015	10,311	11,308	11,537	12,463	12,194	5-2
MAT, etc.	(3)	21	29	26	49	32	55	5-3
PhD (also DSc, etc.)	(4)	1,737	2,332	2,382	2,731	3,003	3,514	5-4

4. Enrollment Trends:

			Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full-Time		(1)	29,946	30,366	30,820	6	p	9
Full-Time Students U.S. Citizens	Teaching Assistants	(2)	2,785	2,743	2,456	6	p	5
	Self, Loans and Family	(3)	3,315	3,258	3,050	6	m	7
Total Part-Time		(4)	21,088	21,199	21,747	9-sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	10,540	11,155	11,562	10A
Graduate Faculty	(2)	8,395	9,034	9,665	10C
Postdoctorals	(3)	617	690	781	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E-69-G-6

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-3.--Physical sciences, 509 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	7,496	7,851	7,545	7,805	8,644	9,256	5–1
MS (also MA, not MAT)	(2)	3,329	3,537	3,660	3,796	3,869	3,948	5–2
MAT, etc.	(3)	199	226	212	321	316	326	5–3
PhD (also DSc, etc.)	(4)	2,367	2,676	2,947	3,327	3,495	3,704	5–4

4. Enrollment Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full–Time	(1)	30,295	30,916	30,175	6	p	9
Full–Time Students U.S. Citizens: Teaching Assistants	(2)	8,102	8,316	7,967	6	p	5
Full–Time Students U.S. Citizens: Self, Loans and Family	(3)	1,870	2,091	2,018	6	m	7
Total Part–Time	(4)	4,261	4,210	4,521	9–sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	9,558	10,135	10,583	10A
Graduate Faculty	(2)	8,303	8,874	9,414	10C
Postdoctorals	(3)	3,407	3,615	3,786	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E–69–G–6

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-4.--Mathematical sciences, 203 departments

1. _____ (*Name of Institution*) 2. _____ (*Name of Department or Unit*)

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	5,409	5,671	6,058	6,512	7,108	8,160	5-1
MS (also MA, not MAT)	(2)	2,084	2,324	2,649	2,787	2,878	2,991	5-2
MAT, etc.	(3)	374	439	489	620	568	602	5-3
PhD (also DSc, etc.)	(4)	591	653	723	808	949	1,071	5-4

4. Enrollment Trends:

			Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full-Time		(1)	11,346	11,700	11,727	6	p	9
Full-Time Students U.S. Citizens	Teaching Assistants	(2)	3,900	4,048	3,869	6	p	5
	Self, Loans and Family	(3)	1,828	1,689	1,702	6	m	7
Total Part-Time		(4)	3,588	3,646	3,690	9-sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	5,169	5,537	5,667	10A
Graduate Faculty	(2)	3,804	4,268	4,471	10C
Postdoctorals	(3)	225	236	247	11A

6. Person completing this form: _____ (*Signature*) Date: _____

_____ (*Name typed*) Title: _____

Part of Announcement E-69-G-6

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-5.--Life sciences, 874 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	10,182	11,748	12,285	13,572	15,299	16,949	5–1
MS (also MA, not MAT)	(2)	2,836	3,176	3,583	4,068	4,312	4,387	5–2
MAT, etc.	(3)	245	308	293	295	360	318	5–3
PhD (also DSc, etc.)	(4)	1,735	1,934	2,107	2,442	2,802	3,154	5–4

4. Enrollment Trends:

			Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full–Time		(1)	25,456	26,597	27,588	6	p	9
Full–Time Students U.S. Citizens	Teaching Assistants	(2)	5,064	5,214	5,339	6	p	5
	Self, Loans and Family	(3)	3,021	3,296	3,519	6	m	7
Total Part–Time		(4)	2,708	3,069	3,222	9–sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	12,224	13,251	14,075	10A
Graduate Faculty	(2)	9,723	10,681	11,497	10C
Postdoctorals	(3)	2,491	2,743	3,214	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E–69–G–6

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-6.--Psychology, 141 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending: June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	Corresponding Item on 1970 DDS
BS (also BA, etc.)	(1)	5,747	6,493	7,155	8,745	10,227	11,748	5–1
MS (also MA, not MAT)	(2)	1,152	1,299	1,465	1,691	1,854	2,002	5–2
MAT, etc.	(3)	4	30	10	9	8	21	5–3
PhD (also DSc, etc.)	(4)	759	804	921	1,058	1,186	1,398	5–4

4. Enrollment Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS: Item	Column	Row
Total Full–Time	(1)	10,491	11,317	11,918	6	p	9
Full–Time Students U.S. Citizens: Teaching Assistants	(2)	1,891	2,033	2,133	6	p	5
Full–Time Students U.S. Citizens: Self, Loans and Family	(3)	1,759	1,986	2,081	6	m	7
					9–sum		
Total Part–Time	(4)	1,367	1,551	1,845			

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	2,815	3,081	3,317	10A
Graduate Faculty	(2)	2,385	2,707	2,902	10C
Postdoctorals	(3)	170	214	231	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E–69–G–6

NATIONAL SCIENCE FOUNDATION GRADUATE TRAINEESHIPS FOR 1970
DEPARTMENTAL SUMMARY

Table E-7.--Social sciences, 502 departments

1. _____ 2. _____
(Name of Institution) *(Name of Department or Unit)*

This sheet should be completed in accordance with the relevant instructions for the corresponding items on the Departmental Data Sheet (DDS), NSF Form 345. Data for 1969 should be identical with that entered on the 1970 DDS. If any information supplied on this form differs from that previously submitted in this program, please explain.

2. Degree Productivity Trends:

		12-Month Period Ending						Corresponding Item on 1970 DDS
		June 1964 (a)	June 1965 (b)	June 1966 (c)	June 1967 (d)	June 1968 (e)	June 1969 (f)	
BS (also BA, etc.)	(1)	12,739	14,687	17,719	20,795	23,960	26,909	5–1
MS (also MA, not MAT)	(2)	3,146	3,480	4,287	5,096	5,693	6,229	5–2
MAT, etc.	(3)	20	21	24	71	77	136	5–3
PhD (also DSc, etc.)	(4)	1,202	1,272	1,462	1,755	1,929	2,157	5–4

4. Enrollment Trends:

			Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS Item	Column	Row
Total Full–Time		(1)	25,666	27,387	28,971	6	p	9
Full–Time Students U.S. Citizens	Teaching Assistants	(2)	4,103	4,427	4,721	6	p	5
	Self, Loans and Family	(3)	7,157	7,954	8,805	6	m	7
Total Part–Time		(4)	7,247	7,930	8,621	9–sum		

5. Faculty and Postdoctoral Trends:

		Fall 1967 (a)	Fall 1968 (b)	Fall 1969 (c)	Corresponding Item on DDS
Total Faculty	(1)	8,048	8,764	9,345	10A
Graduate Faculty	(2)	6,468	7,110	7,738	10C
Postdoctorals	(3)	230	222	258	11A

6. Person completing this form: _____ Date: _____
(Signature)

_____ Title: _____
(Name typed)

Part of Announcement E–69–G–6

U.S. GOVERNMENT PRINTING OFFICE: 1971 O—407-712